

THE CULTIVATOR:

A CONSOLIDATION OF BUEL'S CULTIVATOR AND THE GENESEE FARMER.

"AGRICULTURE, AT ONCE THE CAUSE AND EVIDENCE OF CIVILIZATION."

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THE CULTIVATOR.

WILLIS GAYLORD & LUTHER TUCKER, EDITORS.

THE SEASON AND THE CROPS.

Below we give a table showing the comparative tem-
perature of the first seven months of 1838, 1839, and
1840, that our readers may estimate for themselves, the
influence of atmospheric agencies on the amount and
quality of the crops.

	TEMPERATURE.							WEATHER, cl'r days.						
	Jan.	Feb.	March	April	May	June	July	Jan.	Feb.	March	April	May	June	July
1838.....	32	14	40	39	57	77	81	13	5	20	11	9	18	20
1839.....	25	32	35	54	61	71	76	7	6	14	18	15	12	16
1840.....	19	35	37	49	64	71	71	6	4	9	17	18	16	

The given temperature of any month or season, may
be inferred in a great measure, from the number of
clear days it contains. Thus, April 1838, had 11 clear
days; and the average temperature was 39°. April
1840, had 17 clear days, and the average was 49°.

April 1839, had 18 clear days, and the average was 54°.
The first six months of the year have been remarka-
ble for their sudden and extreme changes of tempera-
ture. Thrice has the change exceeded 50° in less than
48 hours; and in one instance, reached 55° in that time.
Such changes are unfavorable to vegetation, and to
health; but on the whole, the season, up to the 20th of
July, the time of penning these remarks, must be con-
sidered favorable to the husbandman. While few dis-
tricts have suffered from drouth, the northern and mid-
dle states have been mostly exempt from those heavy
rains and severe storms that have inflicted so much
damage in the southern sections of our country. By
the sudden reduction of temperature of which we have
spoken, frosts have occurred at later periods than usual,
in several sections of our country. We learn from Gov.
Hill's Monthly Visitor, that several frosts had occurred
in that state, up to the 3d Monday in June, not of a na-
ture, however, to excite any fears for the corn crop; and
we learn from a gentleman who was in that section at
the time, that a severe frost occurred in some parts of
our southwestern counties on the 4th of July.

Before this sheet goes to press, the great staple crop
of the north, *Wheat*, will, in most cases, have been cut
and secured. At this time, it may be said to have es-
caped; and except in a few instances, to be beyond the
reach of the three great enemies of the wheat crop, the
fly, the worm, and blight. The quality of the wheat is
admitted on all hands, to be excellent; the berry fine,
plump, and bright, and such as will make the best of
flour. As to the quantity, there is evidently some dif-
ference of opinion; some supposing it to be an enor-
mous one, while others rate it as not middling. The
truth probably lies between these estimates, and from
the best information we receive from all parts of the
country, the crop must be considered a good one. In
some districts, the fly did damage; in others, the worm
has shown itself, but to a comparatively limited extent;
while the most serious drawback is to be found in the
freezing nights and thawing days that succeeded the dis-
appearance of the snow, and on heavy clays, or those
of shallow tilth, caused the roots of the wheat plant to
be lifted from the ground, and in consequence, many
perished. The moderate weather, and light but fre-
quent rains of the spring months, had a tendency to
counteract this evil, and many pieces of wheat have so
far recovered, as to promise a medium crop, that would
have failed entirely, had the freezing out been followed
with drying winds and a clear sky. There was doubt-
less more land sown with wheat in the fall of 1839, than
in any previous year, including the extensive additions
made in the western states, and the quantity of spring
wheat sown has probably not diminished. That there
will be an abundant supply of wheat therefore for domes-
tic consumption, or exportation, should this product be de-
manded abroad, cannot reasonably be questioned. As
wheat is the only grain crop of the western states that
can be grown with any prospect of its paying trans-
portation, and as that section of our great country seems
peculiarly adapted to the production of this crop, it is

reasonable to conclude that a large part of our wheat
will hereafter be furnished by that rapidly populating
and fertile region. Shall the wheat grower of the At-
lantic states then cease to cultivate wheat? By no
means; but to compete in his own home market, with
the western wheat grower, he must cultivate his land
more skilfully, and thus grow greater crops on less land.
If the same amount of grain should be raised on fifty
acres, that is now raised on one hundred, it is clear the
profits of farming would be greatly enhanced, by a re-
duction of the capital employed to produce that amount
of grain.

Barley appears heavy and good. The ears are well
set, and the grain fine and plump; and as a fair breadth
of this grain has been sown, the crop will be a course,
a good one. The demand for barley for malting, is in-
creasing annually, and large quantities are floured, or
used for making pork, feeding animals, and the other
purposes to which coarse grains are applied.

Oats rarely fail of giving good crops, when receiving
what may be called decent culture, and the present sea-
son they are remarkably fine. Perhaps there was not
as much land sown with this grain, as in some former
years; but the crop will be abundant, so far as present
appearances may serve as a guide. Of all the grains,
there is none that so near combines the quantity of nu-
triment the horse should receive, with the coarser mat-
ter necessary to distend the stomach and promote di-
gestion, as the oat; and consequently, it proves better
adapted to that animal than any other. It is possible
that corn ground with the cob, would unite these prop-
erties as well, as it is known that horses fed with
corn meal and cut straw, do their work admirably, the
straw in this, furnishing the same bulky matter that
would be given by the cob in the other. Where corn is
ground for feeding pigs, as it always should be, mixing
one-third oats before grinding, has been found an im-
provement of the feed, as well as a saving in expenses
of fattening. We think the agricultural census now in
progress, will show in some of our counties, a great pro-
duce of this crop in proportion to the other grains, or to
the population.

Every thing now indicates that the *Corn* crop through-
out our country, will be a good one. Of all the coarse
grains, this is the most valuable; and perhaps there is
none, the success or failure of which in the whole coun-
try, would exert so much influence. There are some
who apprehend that early frosts are to be expected, from
tendency shown in the sudden changes to sink the tem-
perature to a low point. But within a few years, much
attention in the most exposed parts of our country, to
the selection and cultivation of early varieties of corn has
been paid, and unless frosts more early, and of greater
severity than usual occur, we may expect a good crop.

It is too early to speak with certainty of the *Root*
Crops. We have seen some fine pieces of the turnep,
sugar beet, carrot, &c., but the yield and value of these
roots is in a great measure depending on a later period
of their growth. We have observed that land planted
with the beet this season, appears to show a greater
failure of plants than the turnep or the carrot. This may,
in part, arise from bad seed; but the beet is a
somewhat difficult seed to vegetate, unless in favorable cir-
cumstances, and the weather last spring about the time
of planting such seeds, was in general so wet and low
in temperature, that many of the seeds may have rot-
ted before germinating. It has been in some cases
found useful to mix beet and carrot seeds, before the
time of sowing with some rich fine earth, kept sufficient-
ly moist and warm to secure germination, and when this
commences, to plant the seeds at once. In this way,
few are said to fail, and the plants spring quicker and
more vigorously.

The crop of *Grass* will not be a heavy one, but a fair
medium one at least. Plaster has not shown as much
power this year, on grass, as in some other years, which
may be attributed to the occurrence of frequent rains
and a low temperature during much of the spring sea-
son, or about the time of sowing this article.

On the whole, notwithstanding partial failures, the
present appearances warrant the belief that in few, if
any former years, will the barns and granaries of the
farmer, have been more abundantly filled, than in 1840.

CLEAN GROUNDS.

The great secret of successful farming is to *never al-
low any thing to grow that is not sown*. It is idle to ex-
pect good crops, while from one-half to two-thirds of
the nutritive properties contained in the soil, and at
least that portion of its power of vegetation is consum-
ed by plants not cultivated, or in other words by weeds.
Our meadows have light crops of grass, but is there not
an ample one of moss, johnswort, crowfoot, or daisy;
we get fifteen bushels an acre of wheat, but has
not vegetative power enough been expended on the

charlock, stein kroust, or thistle, to have made the
fifteen bushels thirty? Look at our potato or corn
fields, in which the planted crops are maintaining a
doubtful struggle for existence with a vigorous growth
of vile interlopers, too numerous to be named. Is it not
a truth, that we allow one half of the actual value of
our lands to be thus filched from us, and lose one-half
our labor? Is it not true that we do not cultivate our
lands as well as we ought, to get the greatest returns
for the capital employed in agriculture? Better to till
50 acres as it should be, keeping the soil rich, clean and
constantly improving, than to perpetuate the exhausting,
improvident, unprofitable methods now so common, on
200 acres.

LARGE SALE OF BERKSHIRES.

It will be seen by the communication below, that the
SHAKERS at Watervliet, near this city, have sold out
their entire breeding stock of Berkshire hogs, to A. B.
ALLEN, Esq. of Buffalo, and that they retire from the
business of breeding them for sale. On the day pre-
vious to the shipment of the stock to the west, we had
the pleasure of riding out to the neat village of these peo-
ple, and looking over their superior animals; and, how-
ever familiar we may have been with Berkshires, we
must confess that the splendid array of these noble
quadrupeds excited our astonishment and admiration.
While we regret that Albany county should lose this
choice stock, we are glad to find that it has fallen into
the hands of so spirited and judicious a breeder as Mr.
ALLEN; and perhaps it is upon the whole for the best,
as at Buffalo it is several hundred miles nearer to the
Great Western Market, and we are not without hopes
that this greater proximity to purchasers, will ex-
tend the diffusion of the breed, for we are satisfied that
the pork growers cannot possibly make a more profit-
able investment than in the improved *machines*, (if we
may be allowed the expression) for the manufacture of
this great staple article. No farmer would want but
one sight of the beautiful store barrows that we saw in
the piggery, to convince him of this. Their large fine,
and delicate forms, could not fail to excite his admiration.

Mr. ALLEN has also purchased a few other very large
choice animals, of established reputation as breeders,
belonging, we believe, to Messrs. MIDDLETON and
MEIGS of this city. All these animals have been stin-
ted to Mr. LOSSING's late imported boars, and cannot fail
this fall to produce a very choice offspring. We doubt
whether, with this addition to Mr. ALLEN's stock, his
herd can be beat, or rarely hardly equaled, by any herd
in England, at least if we may judge from the finished
engravings which occasionally appear in the British
Farmer's Magazine. In the March No. of the present
year, we find the portrait of a bear bred by the Hon.
J. Shaw Lefevre, a wealthy landed proprietor, and speak-
ing of the British House of Commons, and by the exhibi-
tion of which, at the Oxford meeting of the English
Agricultural Society, he won the highest prize of ten
guineas (\$50.) Forward, this might be called a good
animal, but otherwise he has narrow hams, and a high
steep rump, and has nothing of the finished air and fash-
ionable range of the Shaker stock. Mr. A. informs us
that he intends still to enlarge his stock, and that he has
made arrangements to receive in September next, some
of the best that the piggeries of England can afford,
without regard to price, and unconnected with former
importations, for a fresh cross. With these additions to
the previous high bred stock of Mr. A., the person who
cannot be satisfied from its produce must be hard to
please. We wish him every success in his laudable
enterprise in the improvement of the stock of the great
and fertile west.

— Watervliet, July, 1840.

"EDITORS CULTIVATOR—Being situated so far from
navigation, and it being so troublesome for us to ship our
stock, we have concluded to retire from the business of
breeding Berkshire pigs, and have accordingly sold out
all our prime stock to A. B. ALLEN, of Buffalo, reserving
only a few sows of medium sizes for the production of
our own pork. This is a very superior stock, and such
as has universally taken precedence even among Berk-
shires, wherever sent. Most of these animals are about
as large of their age, as the superb sow Maxima, pur-
chased of us at one hundred and fifty dollars, by John
Lossing, of Albany, and faithfully figured and described
in the May number of the current volume of the Cult-
ivator, and one of them we think, when fully grown,
will even be superior; and we earnestly recommend
this stock to the public, and have no hesitation in say-
ing, that it will not be likely to deteriorate in the hands
of A. B. Allen, and those who have heretofore ad-
dressed their orders to us, we respectfully refer hereaf-
ter to him.

"STEPHEN WELLS,

"JUSTICE HARWOOD,

"Trustees of United Friends, commonly called Shakers."

THE PLOW AND ITS USE.

In no one thing has the striking advance of what may be termed the mechanics of agriculture, or the manufacture of farming implements, within the last twenty years, been more fully shown, than in that most important article of husbandry, the plow. When we compare the present beautiful, light, and yet strong, plows, in general use, with the clumsy, heavy, ill-constructed implements used twenty or thirty years since, it is impossible to deny, that in this respect at least, a great improvement in the means of good farming has been effected. Some twenty years since, a gentleman of Massachusetts, convinced of the inefficiency of the common plow, ordered from England a new plow, which was highly spoken of, but on its arrival, found it such a huge, clumsy, heavy combination of wood and iron, that, after various unsuccessful attempts at use, he was obliged to lay it by, it requiring more team and hands to manage it, than even the ordinary Bull plow of New-England, to which he had been accustomed. Wood, about this time, invented the cast iron plow, and this discovery, in the hands of skillful and scientific men and good mechanics, has effected a total revolution in the qualities and construction of that implement.

It is somewhat singular that, to the celebrated author of the Declaration of Independence, this country also owes the first theory of the plow, formed on correct philosophical and mathematical principles. In order to test the correctness of his theory, at the suggestion of Jefferson, Mr. Smith of Pennsylvania, in 1803, made the first cast iron moldboard, as a substitute for the wooden one hitherto used. It succeeded, and this had a direct tendency to do away the awkward wedge-like form of the old plow; and this formed the first step, which has led to the simple yet beautiful application of power, shown in the present improved cast iron plow. The land side, and the point, were successively added, thus securing ease of working, with great strength and durability. We well remember the first cast iron plow that fell under our notice, (and it was one of Wood's earliest invention,) and so associated with brittleness and fragility were all our ideas of cast iron, that we should not have deemed it worth an hour's purchase in any field, other than the cleanest and best. Experience, however, showed the fallacy of such impressions; patent after patent was taken out for what were deemed improvements, and each new plow received a fair share of public favor and patronage.

It would be somewhat amusing, and certainly instructive, to trace the history of this implement from the earliest notice it has received, or its earliest delineations on the coins and sculptures of antiquity, down to the present day. The plow of the ancients, and the teams used, were of the simplest kind. The top of a tree, of which one branch constituted the handle; an opposite one, shortened and sharpened, was the plow proper; and the main stem, trimmed of its superfluous branches, and cut off at the proper length, constituted the beam. Asses or heifers formed the teams, when society had so far advanced as to substitute animal for human labor. Before that, men, or more frequently, women, drew as well as held the plow; and so slow were changes on domestic matters in the east, that Pliny speaks of seeing, in Africa, fields that produced most luxuriantly, worked by an implement like the above, to which was yoked an ass and an old woman. In some parts of the eastern world, the plow still used, is not much superior to the primitive one, though a piece of iron is sometimes tied to the under branch that penetrates the ground, and bullocks are in some places used to draw it; the plow used by the Polish peasantry is of this kind, and in Africa, a sharpened stick, or a wooden paddle, constitutes the implement used for stirring the earth preparatory to a crop.

We do not intimate that the plow, even the best kind, can be considered as having reached its limits of perfection. With that implement, as with other things, one decided improvement serves only to suggest another. The changes in material pointed to changes in structure; and instead of the blunt, wedge-like form of the old plow, a tapering, lifting form has been given, which, penetrating the earth easily, and reversing it readily, dispenses with much of the force formerly required to move it, while at the same time the work is done in a manner to which the old plow could make but faint approaches. The effect of early habits is still to be seen in our plows, though not to the extent it formerly was. In the early settlement of any wooded country, knolls made by the turning up of the former forest trees, will abound, giving an unevenness to the surface, requiring several plowings to remove. On such lands, none but plows with short beams and nearly upright handles, can be used to advantage; and such is the character of the plow in all new countries. Plows of this description do not run as easy, and require more labor in the holding, than those made with larger beams, and a corresponding increase in the length of the share and point. A well constructed plow has its under surface running parallel with the surface of the soil, no matter what may be the depth plowed; but when constructed in such a way that the plow is continually on its heel, or its point, the plowman finds hard work, and the work itself must be imperfectly performed. Every one who plows, is aware that on the same soils, one plow will run so true and steady as to require scarce an effort to guide it, while another demands constant attention and effort; and he also knows that in most cases, the easiest running plow will be the one with the long-

est exposed surface, and handles of the greatest inclination; and the reasons for this are so evident, as not to require elucidation.

Farmers have been considerably divided in opinion on two points connected with plows, or rather with plowing; one of these regarding the manner in which the furrow slice should be turned over; and the other, the depth to which land should be plowed. Some have contended that the furrow slice should never be laid flat, but always in such an inclined position, that the edge of one slice should just rest on the next one, leaving under the edge so raised, a vacancy nearly as deep as the thickness of the furrow slice. This, it is contended, is advantageous, by hastening decomposition, and by allowing water to pass freely off without injury to young plants. Other farmers maintain as strenuously that the furrow slice should in all cases be laid perfectly flat, or reversed in such a manner that a field after plowing should be as level as before, the plow simply reversing the surface of the slice. In this, as in a majority of controverted points, our experience and observation leads us to conclude that both sides are partly right, and both partly wrong. We have found that, if on strong and with a tenacious or impervious subsoil, which retained for some time what water fell upon it, the furrow slice was slightly lapped, so as to leave a space below, young plants suffered less from a wet season, or an undue accumulation of water, than they would if the furrow slice was fully inverted, and the surface made smooth and even. On the contrary, we have been led to believe that on a light soil, or one inclining to be dry or porous, it was better to invert the surface completely, and by rolling, render the surface smooth, and its particles as compact as possible. A surface so treated, will retain its moisture longer than if left in a state more loose and friable, and the conducting power will be increased by the particles being brought more closely in contact. Let the farmer, then, whose subsoil is impermeable to water, lay his furrows as dipping as he pleases; the more space below, the better for him; but on a light porous soil, lay the surface flat, and make it as dense as it well can be. The benefit, which compressing sandy soils confers, is well understood in Norfolk, in England, where the treading of the sheep in feeding the turneps in the field, is considered not the least beneficial part of the culture required for the production of wheat.

Nearly the same remarks may be applied to the other controverted point, viz: that which relates to the depth of plowing. The propriety or impropriety of deep plowing must be determined by the soil itself; by its condition, in reference to a supply of vegetable matter in the soil, and the depth to which it has been formerly plowed. Where the stratum of fertile soil is thin, and the subsoil, no matter from what cause, incapable of promoting vegetation, it is bad policy to bring this infertile subsoil to the surface, as a stratum in which seeds are to germinate. And where the soil is permeable to the depth of twelve or eighteen inches, or as low as the plow can penetrate, and is filled with fertilizing materials, deposited by the processes of nature, or by manure applied to the surface in cultivation, then the plow may run deep without fear of injury to the present crop, and the certainty of benefit to the future ones. We think the true method of rendering any soil deep and fertile, is to plow no deeper, and bring up no more of the infertile earth at a time to the surface, than can be thoroughly corrected by manures, to be incorporated with it, and thus made friable and productive. At each successive plowing, if this course is followed, the soil will be gradually deepened and rendered productive to any desired depth. By pursuing this course of manuring and plowing, Judge Powell rendered his soils fertile to the depth of fourteen inches, and where the roots of plants have this depth of good earth to range in and seek their food, the farmer can hardly fail of securing first rate crops. Every part of a soil so prepared, is fit for the germination of seeds to the lowest depth to which the plow can reach; and the more thorough the plowing is given, the greater will be the surface exposed to the benefits of aeration, or the ameliorating influences of the atmosphere. One of the greatest differences between the old and the new husbandry, depends on this question of plowing. In the old mode, the plow was used year after year to the same depth, and the manure applied with reference to the crop solely, while the improvement of the soil was wholly left out of sight. As a natural consequence, "there was no depth of soil," and when manure failed, the fertility of the land was gone, with scarcely a possibility of renovation under such a process. In the new husbandry, the permanent improvement of the soil, by gradual manuring and deepening, is kept steadily in view; and hence the accumulation and use of manures has received an additional importance. The garden is usually far the most fertile part of the farm, and this is brought about by the gradual incorporation of manures with the subsoil raised at each successive plowing, until the requisite depth and fertility is gained. On lands long plowed to a uniform depth, as they were under the old system, the pressure of the plow on the same surface, gradually formed an impenetrable strata, thus forming a fatal obstruction to the roots of plants, where it did not naturally exist. In England, on soils inclining to clay, and which have been under the plow occasionally, or almost perpetually for centuries, this impermeable pan is common, and one of the most decided advantages found to result from the subsoil plow, is the breaking up and demolition of this artificial obstruction to the spread

and depth of the roots of plants. On the old cultivated fields of New-England, the same difficulty exists more or less, and can be removed, and the soil rendered fertile by the same means so successful abroad.

The too frequent plowing of land is not to be recommended in any case, and unless absolutely required to destroy foul weeds, it should receive no further moving than is requisite to fit it for a crop. The great mistake of Tull, was, that plowing or pulverization would supersede the use of manuring. But experience shows, what indeed philosophy inculcates, that beyond a certain point, plowing is injurious; and that, though essential benefits are derived to the soil from the action of atmospheric agents, manuring in some form, is indispensable to successful farming. It may be said that an application of manure should take place every time land is plowed and cropped. On land that has been brought to a high state of fertility, the decomposition of the rich sward will usually prove a sufficient dressing for a single crop; but for a repetition or rotation of crops, manures cannot be withheld without a certain deterioration of the soil, and a probable lessening of the crop. Plowing and manuring must go together, and without this combination, each will be found defective and incapable of producing such results as are certain to ensue when both separate processes are skillfully united. We are therefore disposed to consider every decided improvement in the plow, as a sure indication of progress in agriculture; a proof that another step in the correction and dissipation of ancient error has been gained; and the way opened and the means provided for still farther and more important advances.

CEMENTS.

The use of mortars and cements, in the construction of our public works; in the erection of public and private edifices; in the making of cisterns and aqueducts, and for other purposes, has become an object of state and national importance, and deserves the attention of the chemist and the engineer in a greater degree than it has yet received. By the use of bad materials, this state has suffered already from the premature decay of its structures on the Erie and other canals, a loss we may say of millions; and there is no reason to suppose but that throughout the country the loss from the same cause has been in full proportion to ours. The state of our aqueducts, locks, and culverts, on our canals; the tumbling down of long ranges of brick buildings in our cities, while the process of erection is going on, or immediately after their completion; all prove that our mortars and cements have been miserably made, and without that knowledge of the nature of the materials used, indispensable to success. We are glad, therefore, to see our civil and military engineers turning their attention to this point, and detecting the causes that have led to such results. Among those who have furnished their quota of intelligence, we may mention H. S. Dexter, in his late Report to the Canal Commissioners on this subject; and Col. Totten of the U. S. Engineers, in several valuable reports, and statements of experiments.

The structures of the ancients were of two kinds, one in which the materials were kept in their place by their weight, as in the walls of Tyrrhus, and the ruins of Baalbec; the other in which cement was used, as in the walls of Babylon, and the greater part of the pyramids in Egypt. Two kinds of mortar or cement were used, that of the walls of Babylon being the asphaltum, now extensively used in the construction of pavements in cities, &c. and the other, mortar made of lime and other materials. It was for a long time supposed that the ancient mortar contained ingredients unknown to the moderns, and to which its superior hardness was to be attributed; but chemical analysis has shown this to be an error, and that the constituents of the Roman mortar or cement are the same we are in the habit of using, and that its conversion into stone, must be considered partly as the work of time, but more as the result of greater skill in the preparation.

Hydraulic or water limestone is the basis of all good cement; and fortunately this state is furnished with an abundant supply of the best quality, although it is evident there has not always been care enough taken in selecting the materials used in the preparation. Onondaga, Madison, and Ulster counties have inexhaustible quarries of this stone, and vast quantities are now annually prepared for market. The Clittenango works alone afford more than a hundred thousand barrels yearly, and the Ulster works furnish about 500,000 in the same time. The stone is found in layers of 4 or 5 feet in thickness, between strata of the common limestone; is burned in kilns, requiring from 60 to 80 hours for its calcination, and is then broken up and ground in mills to fit it for use, as this stone will not slake after burning, like common lime.

The great cause of the failures of cement to set, and consequently the inferior nature of the mortar, appears to lie in two things: the first arises from the age of the cement; and the other, the quantity or quality of the sand used. If cement is left for any time after being ground, it deteriorates rapidly, and soon becomes unfit to make good cement. This result, which would seem to be owing to the reabsorption of the carbonic gas, expelled by the first burning, Mr. Dexter has discovered may be obviated by calcining cement that has been injured by age, a second time, immediately before using it. This is important, and should always be attended to, when there is reason to suspect the quality of the cement. The other cause of poor mortar, the

quantity or the quality of the sand used, should also be well looked to. The experiments of Pasley and Treusart of Europe, and of Col. Totten of this country, prove clearly that the strongest mortar is made of pure cement; that it is weakened in proportion to the sand used; that when sand is used, the finer and sharper it is, the better for the mortar; that earth, or what is called loam, mixed with sand, will prevent the mortar from setting or hardening; and that sand washed and reduced to a powder by pounding or grinding is superior to any other for mortar or cement. In that great work, the Thames Tunnel, M. Brunel employs cement and sand in equal parts for the foundation; two parts of cement and one of sand for the walls and piers; and pure cement for the arch or roof, that being the part where the greatest strength is required. In this state the general rule we believe is, to use two or three parts of sand to one of cement, a proportion evidently far too great for ordinary cements.

Within the last five years, thousands of cisterns have been built by farmers and others in our country; and a very large proportion of them, from the use of defective materials, have proved worthless. Cement has also been much used for aqueducts, or as a substitute for lead or wooden pipe in conveying water from one part of a farm to another, or to the dwellings, for domestic or farm purposes, and would have been still more so, had not, from the causes before assigned, many that had been laid down failed of their object.

Cements are yearly coming more extensively into use; the geological surveys have demonstrated its abundance, its superior quality, and its wide diffusion, in our state; and they promise to become an important article of manufacture for exportation to districts or countries where they do not exist. It is of consequence, therefore, that every thing relating to its quality, use, manufacture, &c. should be carefully investigated and thoroughly understood. Experience has shown that ignorance or parsimony on this point, so far as public or private structures are concerned, is the worst kind of parsimony; and that had the state employed a competent individual to superintend and inspect the cement used on the public works, hundreds of thousands of dollars would have been saved to the state in what has already been rebuilt, to say nothing of what remains to be done; and to repeat errors, whether of the public or of individuals, is what should be sedulously guarded against.

STAGNANT WATER.

Of all the causes that contribute to render soils poor and worthless, we believe there is none more active than stagnant water, on the surface or immediately below. Such soils are invariably close and tenacious, and commonly quite unproductive. Where there is a retentive subsoil, the surface generally abounds in clay, is difficult to work, and gives a less reward to labor than almost any other. This is owing to the stagnant water held by it, as none of the valuable plants can flourish in a soil so constituted. Land is liable to injury from this cause, on which water during wet weather rests on the surface for even a short period, for the roots of a plant cannot penetrate a soil freely, in which the density is such that rain water does not freely sink through it to the natural drains in the subsoil, below the ordinary range of the roots of plants. Water is essential to the growth and perfection of plants, but water that does not circulate, or which exists in too great quantities, is fatal to them; and the first thing to be done, is to free soils from this incumbrance, if we would give it productiveness, and render it easy of culture.

It is from these well known effects of stagnant water, when on the surface, or within reach of the roots of plants, that the necessity of draining arises, and which system of operating, when fully carried out, completely changes the character of lands submitted to such a course. Manures applied to soils abounding in stagnant water, can produce little effect; the salts they contain are diluted, and cannot produce that action, or circulation of atoms, which appears absolutely necessary to productiveness. In clay, or in stagnant water, where substances are not exposed to heat and atmospheric agencies, decomposition is slow. Every farmer knows that manures produce much more effect on loam, gravel, or drained clay soils, than on those so retentive as to have water on or near the surface. Draining them, and aeration, or the exposing the soil to atmospheric action, to the influence of the sun and air by deep ploughing, seems to be the only thing that can be relied on to correct this serious evil.

Instances indeed occur in which the wetness of land is produced by springs, which rising from the earth, spread over it; but in far the greater number of cases, the stagnant water is owing to a retentive subsoil, that prevents the escape of such water as falls upon it. In either case, however, the remedy is the same; and in the language of Morton on Soils, complete and perfect draining is the foundation of all improvement in husbandry, and it should, therefore, be the first step which we take in attempting to improve or ameliorate the soil.

A very large proportion of the lands in this country, are of that class that suffer more or less from the accumulation of water. No person can traverse it in various directions, without being sensible of this fact; and in consequence of such liability to suffer, the land in many districts is cold and poor, as land not freed from stagnant water always must be. The hard pan lands which cover so large a portion of the country, may be

named as belonging to this class, though some of these contain more clay than others, and are therefore more shallow and difficult to work than others, where the subsoil, although still too retentive, lies deeper, and is therefore not so injurious as the first kind is well known to be.

Much of this hard pan, when freed from its stagnant water, drained and plowed, will become very fertile and productive; indeed there is no case in which a soil cannot by sufficient labor and expense, be made precisely what is desired. The native earths that go to constitute soils, the clay, sand, and lime, in themselves do not make a soil productive; properly mixed and proportioned they constitute a base for the action of the vegetable and animal manures, and the various salts or stimulating agents, that excite the organs of plants to vigorous action, and enable them to make these secretions from the matter furnished them, to be appropriated to the growth of the plants. Man, then, has only to do what nature in some cases has herself done; that is, so proportion the several ingredients that go to make a productive soil, that the desired result shall be attained. Chemical analysis has here come to the aid of the agriculturist, and shown him precisely the proportion of the earths, and the nature of the ingredients that are necessary to make a soil fertile, and the causes that tend to advance or retard such a consummation. Where water is too abundant, it must be removed by draining; where the soil is too compact, it must be loosened by deep or subsoil ploughing; where the proportion of clay is too great, sand must be added until it is sufficiently friable; if lime is absent, it must be added; if animal or vegetable matter be wanting, it must be supplied; and if the soil is too light and porous, clay will be found a remedy most effectual.

Whatever difference of opinion, therefore, may be entertained of the best methods of freeing land from stagnant water, there can be no reasonable doubt of its propriety or necessity. To the farmer who has lands wet, cold, and difficult to cultivate, we would say, free your soil from all stagnant waters to the depth of eighteen or twenty-four inches; loosen it to that depth, either at once or gradually, and there will be no difficulty, under a judicious course of cultivation, of producing on lands now of little value, all the most important products of agriculture.

STATISTICS OF PAUPERISM.

One of the greatest drawbacks to the prosperity of Great Britain, the load that hangs with more than millstone weight on the necks of her producing classes, is her pauper system; originating in some of the best feelings of the heart, but wrongly directed, and so frightfully abused, as to have become an almost unmitigated curse, instead of a blessing to the community. The true end of all legislation on subsistence, as connected with poverty, should be based on the fact that every one able to labor, is bound by the original law of God, and of society, to support themselves, and that every measure that tends to infringe this rule, whether by encouraging idleness, or by appropriating the labors of the industrious, must, in the end, result in unmitigated evil to all concerned. Ill directed aid to the poor, tends to encourage them in their habits of improvidence, and perhaps profligacy; and depresses and discourages the efforts of the honest and industrious. It was Burke, we believe, that said, "every man was as idle or lazy as he could be," or, in other words, that nothing but the dread of want prompted men to exertion. Now, without stopping to inquire as to the extent in which this is true, it is very evident that men very readily acquire the habit of living on the labors of others; that this is soon done without any apparent feelings of reluctance or shame; and that nothing has a more direct tendency to destroy all honorable independence of feeling and conduct in the mass of a people, than to know the idle and improvident are sure of support, without care or labor on their part. This, experience in England, if not in this country, has abundantly proved.

We believe that with many, the influence and example of the foreign vagabonds who, educated and instructed as beggars at home, prowl around our streets, subsisting on charity, and imposing on the credulous, is most destructive and contagious. While we welcome to our shores the poverty-depressed, but honest laborer of Europe, we cannot avoid deeming the multitudes of paupers and profligates poured in upon us, as one of the most serious evils of the day. They not only subsist themselves on the earnings of the frugal and industrious, but by their example, they deprave the morals, and unsettle the habits of many, that had before, by the fear of public opinion, or some remaining sense of shame, been capable, or compelled, to support themselves.

Strange as it may seem to the honest, industrious laborer, whether farmer or mechanic, that the man who is able to dig, should not be ashamed to beg; it is certainly true, that the numbers of those who subsist on the public bounty in this country, has been rapidly increasing, and the tax paid by the man who works, to support the idler and the pauper, has increased in a corresponding ratio. Society is bound to take care of those unable to take care of themselves; those, who by an act of God have been rendered incapable of providing for their own wants; but neither justice or policy, requires any thing more than this. The clearest dictates of human nature, the soundest principles of philosophy and economy, no less than the voice of inspiration, proclaim that labor and bread are to go together; that if a man will not work, neither shall he eat. If you wish to make a man worthless and depraved; if you wish

to destroy him in his own estimation and that of others; if you wish to root out the last spark of independence and manly feeling from his bosom, make him a voluntary pauper, and teach him to accept of charity without a blush, and the work is done.

We have been led to these remarks, by an examination of the "Report of the Secretary of State, transmitting abstracts of the returns of the Superintendents of the poor in the several counties of this State, for the year 1839." It is an interesting document, to be read and reflected upon by every friend to his country. England has found her poor rates increased to the fearful sum of forty millions of dollars, annually; and although the past year shows a slight falling off from former years, in the expenses, yet the rapid annual increase, shown in the tables given, proves that the same causes are at work here, as there; and if not timely checked by an improved system of general education, and the inculcation of a spirit of self-reliance and independence, will eventually produce the same bitter fruits. We may add that the examination of the poor-house and pauper returns, as well as those of the prisons of the State, demonstrates that nine-tenths of the pauperism, degradation, and crime of the country, is owing to intemperance, to the unrestricted use of ardent spirits.

We add a few of the general results, as shown in the report.

"The whole number of paupers relieved and supported during the year ending 1st December, 1839, was 48,713. Of these, the county paupers were 45,899, and the town paupers, 2,814."

Of these, the number supported in the city of New York was 22,778.

Of the persons who received relief in 1839, there were,
 Foreigners, 7,607
 Lunatics, 880
 Idiots, 265
 Mutes, 48

The number of lunatics reported in 1839, was 586, thus showing an increase of nearly 300. To what shall this be attributed? In France, the first year of the revolution nearly doubled the numbers in the insane hospitals of Paris; and cannot part of this addition here be a natural result of the "state of the times?"

The following table, prepared from two given in the report, will show the average annual expense of supporting each pauper; and also the whole expense for each of the years named.

1830.....	\$37 03, in 44 counties,	\$216,535 00
1831.....	33 28, " 54 "	245,233 21
1832.....	32 41, " 51 "	267,767 80
1833.....	32 21, " all the counties,	295,239 13
1834.....	30 78,	304,913 21
1835.....	32 72,	323,841 12
1836.....	32 53,	396,100 05
1837.....	37 06,	495,095 71
1838.....	34 03,	570,669 83
1839.....	34 73,	566,484 83

We invite attention to the annual increase of the whole state expenses for supporting paupers, and ask, how long it would take at this rate to bring up our poor rates for our population, as high as those of Great Britain for hers?

We give entire the last paragraph of the report, as deserving the attentive consideration of all. The subject comes home to the bosoms and business of all:

"The amount of taxes raised in all the counties of the state for the support of schools, is \$275,000, and by districts voluntarily, \$5,875, making a total of \$280,875, less than one-half the amount raised for the support of the poor. While there is no disposition to diminish in the least the force of that sympathy which would provide for the destitute and afflicted; yet such a fact as the one stated, is calculated to induce a desire for increasing vigilance over this branch of expenditure, for the purpose of ensuring economy and fidelity in its administration."

The Subsoil Plow in the United States.

The enterprising proprietors of one of the Boston agricultural implement and seed stores, Messrs. Ellis & Bosson, have, at an expense of some 70 or 80 dollars, introduced one of Smith's subsoil plows; and an experiment to test its use in our soils, was made a few weeks since at Chelsea. The whole length of the plow, including beam and handles, is 15 feet; depth from bottom of beam, 19 inches; so that the depth of furrow can be from 16 to 18 inches. As it is only intended for loosening the soil, it has no mold board; while the small stones are lifted to the surface and thrown out by the action of the plow. In the spot selected for the experiment, the ground was not of the most favorable kind, being very stony; yet the plow worked well, going to the beam where the stones permitted; and some stones weighing several hundred pounds, that were completely buried in the earth, were raised to the surface. The power of the team we have not seen stated; but in England, from 4 to 8 horses are required; the number depending on the nature of the soil. We hail the introduction of the subsoil plow, as a means of improving our heavy, wet soils, second only to draining, and a most useful auxiliary in such operations. No one who has paid attention to the roots of plants, doubts that they would run much deeper than they usually do, were the nature of the soil such as to admit it, and it is also clear that the vigor and productiveness of plants is in a great degree depending on the extent of their pasturage, or soil from which their nourishment is drawn. We trust the effects in this case will be such as to justify their adoption in all cases where the texture of the soil requires their use.

STEAM PLOW

The steam plow is about being introduced into the sugar lands of British Guiana, and several are building in England for that purpose. The engine is placed on board a boat or scow, and five or six plows are moved backwards and forwards with the greatest rapidity and precision. The sugar lands of that country are divided by canals, for draining or irrigation, and thus the difficulty of moving the engine, which has hitherto been a serious one, is obviated. English plows and plowmen, were taken to the West Indies some years since, but both horses and men sunk under the burning heat, and the experiment was a failure. It is expected that the steam engine will supersede a great amount of severe peasant or slave labor, and bring large tracts under cultivation that have hitherto for the want of hands, lain idle or unproductive. Could not the plantations that line the Mississippi, and other southern rivers be worked in the same way, the boats with the engine moored in the stream, and moved as required? If practicable, the amount of product could doubtless be much increased.

INQUIRY—BARBERRY BUSH.

A correspondent at Skaneateles requests our opinion on the subject of the injury which the barberry is supposed to produce on wheat, and whether the belief in such injury is well founded.

We are aware that on this subject, the belief is very general, that the barberry bush does produce blight in wheat, and it is also plain, that this is one of the cases in which the sense or opinion of the multitude is directly at variance with the deductions of philosophy. That wheat will rust or blight is certain; that the cause is the barberry, we do not believe. There has never yet been the least connexion pointed out between the assumed cause, and the effect produced; until this is done, we must be permitted to doubt. Wheat sometimes blights in the vicinity of such bushes, and sometimes it does not; that the same results ensue where bushes do not exist, is also certain.

If the barberry bush injures wheat, it must do it by shading it, by preventing the circulation of air, by giving out some noxious gas, or by throwing off some substance which produces disease or blight in the grain. In shading, or in preventing the circulation of air, the barberry can be no worse than any other shrub; that it gives out a noxious gas has never been proved, but it is at times infested on its leaves with rust, and this rust or fungus, it is contended, is scattered by the winds, and becomes the parent of the wheat rust.

Now if the fungus which infests wheat, and causes its blight, were the same as that which appears on the barberry, there would be much plausibility in the argument that the first was caused by the last. It happens, however, that they are really distinct in their characters, as much so as any other two plants; and it would be just as absurd to suppose that a difference in the soil would convert an onion into a potato, as to imagine that a change from the barberry to the wheat plant would convert one of these funguses into the other. In the first case, the soil furnishes the place of growth; in the last, the plant; and in neither case is more done than to furnish the nidus or place of growth. The fungus of the barberry belongs to that plant; that which infests the cereal plants is exclusively theirs; nor is there the least similarity between them, except in color, a likeness purely accidental, but which in all probability has furnished the only ground for the serious charges made against the barberry. To show the difference between the barberry and wheat fungus, or rust, we have procured the following cuts, illustrating the form of each, and proving conclusively, we think, that the common opinion is founded in error.



BARBERRY BLIGHT.—[Fig. 70.]

Barberry blight—*Aecidium Barberidis*, (Fig. 70.)—The bright orange powder that collects upon the leaves and flowers of the common barberry, consist of the sporules or minute seeds of this species, that are discharged from thousands of little tubular apertures that spread in patches over all the tender parts of the surface. These apertures are the open ends of the peridia in a state of maturity, and are bordered at first by a ragged toothed membrane, which finally falls away. Among all the many beautiful objects that are to be met with in the lower and more imperfect tribes of plants, there are few more deserving of attention than this, connected as

it is, by popular superstition, with one of the most destructive diseases of grain.

a, (Fig. 70,) shows a leaf of the barberry with the red fungus or rust upon it, as it appears to the naked eye. It is in patches, while that on wheat is linear. b, is a highly magnified section of the peridia, showing the cup-like forms from which the seeds or sporules have been ejected, the margins showing the ruptured envelope or covering. c, exhibits a congeries of the sporules or red powder, also highly magnified.



WHEAT RUST OR BLIGHT.—[Fig. 71.]

Wheat rust or blight—*Puccinia Graminis*. This is one of a numerous tribe of parasitical plants that attack and prey upon others, and this has attained a greater notoriety than others, from the great loss it occasions the farmer in some seasons, by blighting and shrinking wheat. Our object, at present, is not to enter upon its origin and mode of propagation, about which opinions are conflicting, but to show that it is an entire different species of plant from the barberry blight, and therefore cannot arise from that source. Loudon says, "The *Puccinia Graminis* which attacks wheat, forms in the interior of the stalk or leaf, and when ripe, bursts forth in clusters like bunches of grapes, of a dark brown color," and in a linear form. The sporules of this fungus is red, and hence rusted wheat gives a red color to the clothes of the gatherer.

In Fig. 71, a represents part of a stalk and leaf of wheat, with the rust or blight upon it. b, is a highly magnified section of the stalk, showing its spongy nature and the manner in which the puccinia originates. c, is a cluster of the stems of the fungus, held together by the outer parts of the wheat stalk. d, is a single head of the fungus, the capsule or seed vessel ruptured, and the sporules or red matter of the wheat rust or blight escaping. Both these last are much magnified.

We are aware that many most respectable men, both in this country and in Europe, have believed in the powers of the barberry to injure wheat; and that it may be said, perhaps, to be the general opinion of the uninformed, both in this country and abroad. Still we cannot admit this fact as evidence of the accuracy of the belief. On the same grounds, astrology and witchcraft would have been true; for the belief in both has been more universal, than the belief in the injurious effects of the barberry.

In presenting our opinions, we do not pretend to infallibility; and as the bush, though valuable for its fruit, can be dispensed with without any serious loss to the community, it would be hardly advisable in any such case to hazard the good feelings of a neighborhood, by persisting in growing or preserving an obnoxious plant or tree. Believing as we do, that the opinion respecting the barberry, is one of the popular errors existing among farmers and others, we shall be glad to see it superseded by a more rational and philosophical conclusion; one more in accordance with the simple, beautiful, and invariable laws of nature.

Hints about Horses, to 'The Cultivator.'

"The Cultivator,"—a consolidation of Buel's Cultivator and the Genesee Farmer,"—is the name of a deservedly popular monthly production in the city of Albany; devoted to the agricultural interests generally. "The Cultivator" was projected, and up to the time of his decease, was edited by the late lamented Judge Buel; since his death its interests have been consolidated with those of the "Genesee Farmer," a periodical of the same general character, which for many years was conducted with signal ability by Luther Tucker, Esq. of Rochester. The Cultivator and Farmer, is now published monthly, in Albany, at one dollar per annum, and Mr. Tucker is still associated with its editorial conduct, in company with Willis Gaylord, Esq. An examination of the last half dozen numbers, has convinced us, that no publication of its class on either side of the Atlantic, is superior to it—a fact which is pretty well demonstrated, by its extensive circulation, now over 19,000. The useful character of the work, may be gathered from the contents of the last number, which may be found in our advertising columns.

As the editors have the assurance of our regard and good wishes, they will pardon the liberty we take in making the suggestion, that they devote a little more space—only a trifle—to the interests of breeders of horses. Those of this state, and indeed of New-Jersey and New-England, have a high reputation to sustain; and while the interests of those engaged in improving the breed of cattle, sheep and hogs, are not by any means neglected, we should like to see the nobler animal cared for, and those who are so honorably engaged in bringing a better stock into use. Mr. Youatt's monthly Journal of Veterinary Science, published in London, and so favorably known as the "Veterinarian," contains a vast amount of valuable information, which might be transferred with great advantage to the columns of the Cultivator, and to those of our agricultural publications generally. To breeders of cattle and sheep, as well as of horses, selections from the Veterinarian, would be eminently useful and interesting. We have to add that the addition now diffidently suggested, will place "The Cultivator" quite at the head of its class. Its conductors should bear in mind, that fifteen years ago, thousands of dollars would have been wagered, that no horse in the world could trot a mile within three minutes; as many would be

laid now, that it could be done in two minutes, twenty-eight seconds. Ten years ago, to drive a horse seventy miles between sun and sun, would have been deemed a great performance; but since strains of the blood of old Messenger have been introduced into our road stock, at the north, hundreds of horses can be found that can travel from eighty to ninety miles without distress. In our paper of this day is a report of the performance of a horse in Boston that, without being trained, was driven one hundred and three miles between sunrise and sunset, over a hilly road, before a carriage, which, with the rider, weighed 470 lbs.

The acknowledged superiority of northern carriage and draught stock is owing almost entirely to the fact, that thorough bred horses have found their way north and east from Long Island and N. Jersey, where great numbers are annually disposed of, that are unsuited to the course. The use of thorough, and half-bred horses, for domestic purposes, is becoming so common in England, that in a few years, no other will be used for the road. The half-bred horse is not only much handsomer, but his speed and powers of endurance are infinitely greater. His head and neck are light and graceful, his limbs fine, his coat glossy and soft as satin, while his action is spirited, and his courage and stamina sufficient to carry him through a long journey without his falling off in condition, or to undergo an extraordinary trial of speed and game, without distress. The ordinary cocktail, is in most instances, a mere brute, that in traveling, sinks daily in strength, losing his appetite, and of course, his flesh and action, so that at the termination of a ten day's journey, he is nearly knocked up; he can travel but about forty miles per day, and requires the whole day to perform this distance. An eminent southern turfman, well known the country over, recovers his horses on a journey; they are all from the north, and have a dash of blood in their veins; after driving them hard about his plantation in the spring, until they begin to look thin and rough, he starts on his annual journey, and by the time he reaches the Virginia Springs, his horses are literally as fine as silk, with fine coats, great spirit and in good condition for fast work. In traveling, he starts early and drives at the rate of eight or nine miles the hour, until 10 o'clock, when his horses are taken out, rubbed dry, watered and fed. In the cool of the day, they are again harnessed, as fresh as if they had not traveled a mile. In this way, he accomplishes a long journey, traveling between fifty and sixty miles a day, without fatigue to himself, or injury to his horses. The slow-going, no-giving sort of style in which horses are jogged along at a snail's pace all day, under a hot sun, knocks them up in a short time; they would neither tire nor lose flesh in double the time, if driven sharply a few hours in the morning and evening, allowing them to rest in the middle of the day. It is the all day work that knocks up horses, not the pace; and we make no doubt, that in the course of twenty years, there will be very few who will refuse to acknowledge the truth of FANNY KEMBLE's remark, that "nothing but the thorough-bred does it quite well."

Our friends of "The Cultivator" may not be aware of the vast amount invested in thorough-bred horses at this moment in the United States, or of the prices some of fashionable blood command. We can point them to two 5 year old horses for which \$20,000 each, has been refused—to brood mares that will command \$5,000 each at auction—to a colt six months old, for which \$4,000 has been refused. Among the popular stallions we have advertised this season, three stand at \$150 each, fourteen at \$100, twelve at \$75, eleven at \$60, and twenty-three at \$50. Probably not less than six thousand thorough-bred mares, and as many more that are full or three quarters bred, will be stunted this season to horses that are standing at from \$35 to \$150. As not above 2000 out of the whole number foaled next season, will probably come upon the turf, it is clearly to be seen that a vast number of "terribly high bred cattle," must be used for ordinary purposes. Of these, the colts of good form, that have plenty of bone and substance, will, of course, oust the common tacksies and cider-suckers that infest country taverns, while the others will be used for the saddle and the road. The result will be, that in a few years, the stock now in use will be supplanted by horses of superior action, wind, and courage, whose greater beauty will not be more apparent than their better style of going, and their unequalled powers of endurance. Under these circumstances, if our friends of "The Cultivator" will give their 19,000 subscribers, a hint now and then, with regard to the selection of stock, the best methods of rearing foals, and the treatment of mares and colts, we are confident they will add an interesting feature of great practical utility to a publication, which already commands itself to the behoof and good wishes of the community at large.—[New-York Spirit of the Times.]

Our readers will doubtless pardon us the insertion of the few remarks of a somewhat flattering character, contained in the foregoing article from the Times, in consideration of the valuable information embraced in the same. We may here say, that we have not overlooked the horse, in our endeavors to convey useful information to our readers respecting the breeding and improving of animals, and standing as it does, at the head of domesticated animals, we hail with pleasure any improvement which promises a better race of horses than those which, too generally in our country, are a mere caricature of the noble beast. Our duty and our inclination, however, prompt us to pay more attention to those breeds and varieties adapted to agriculture and the road, than to those calculated for the turf alone. That for both these purposes, horses of a better kind may be introduced by crosses of the fine limbed, hardy constituted and beautiful thorough-bred, with those possessing the bone and substance necessary to give the weight and firmness required in the draft horse, whether the labor is to be performed on the road or the farm, we do not doubt. For the farm, the thorough bred horse would be comparatively worthless; he lacks weight and substance to give value and power for draft; for road work, the same objections will apply, though not perhaps to the same extent. The best English road horse is a cross of the thorough bred and the Cleveland, and a cross of the same horse with the thick, heavy Suffolk, has given a most valuable farm horse. It is not to be expected, that the proper degrees of blood, activity, power of endurance, weight and docility, so essential to the horse of the farmer, or for the road, can

be obtained at once; but from what we almost daily witness, of the good effects that have resulted already from the comparatively little attention the improvement of horses for labor has received, we can have no doubt that a field is here open for effectually benefiting the community at large more extensive than can be found almost anywhere else. We can assure our friend of the "Times," that we shall not be indifferent or idle spectators of the efforts to facilitate and promote a summation so much to be desired.

PEAS.

"GENTLEMEN—I have read with interest in your April number, an article on the culture of the pea, which was full and complete, with the exception of the omission of the usual time of harvesting the crop. As we cannot sow ruta baga in this region till the first week in July, I do not know a better preparatory crop than peas, if we can get a kind that will ripen by the last week in June. Will you please reply, and oblige yours,
WM. BOWKER.
Shrewsbury, N. J. June 26, 1840."

No time can be stated with precision for the harvesting of the pea, as that is depending on the position where it is grown, and the variety cultivated. The Washington, Charlton, and Warwick, are among the earliest peas in any degree suitable for field culture, but great crops cannot be reasonably expected from any of them. Still, as a preparatory crop, one to which manure may be applied directly with advantage, the pea deserves a trial, and should it succeed, a great point would be gained. The Early Washington is in most general use, and perhaps ripens as soon as any other, and Mr. Bowker can easily determine by experiment, whether in his situation, it will come to maturity early enough to be taken from the ground by the time specified. We think it will.

CULTIVATION OF THE PINE.

"J. M. of Farmington, Illinois, wishes to know the best method of growing the white pine from the seed, and whether it will succeed on the rich prairies of the west."

The seeds of the pine should be sown as early as March or April, in a light soil, mostly composed of sandy, or silicious matter. The seed should not be taken from the cones until the time of sowing arrives, as their power of germination is diminished by such separation for any considerable time before they are put in the earth. They can be transplanted from the nursery at any time, always remembering that June, or in some cases, July, is better than an earlier month for removal.

All the fir and the pine tribes, flourish best on a sandy, gravelly, and somewhat barren soil, as soils so constituted naturally are. The pine is rarely found on our rich, alluvial river bottoms; but on what are called the second banks, it is found to flourish well. We have never seen an analysis of the soil in the western prairies, but it is probable that the driest of these contains sufficient sand to grow this tree well. The pine of the Columbia river, *Pinus loughii*, could the seed be obtained, might succeed better on the western prairies, than the white pine; and it is a tree of most magnificent growth. We imagine, however, that the chestnut, oak, and locust, will be found the most profitable timber trees for cultivation, as their wood is perhaps of equal value, and their growth more rapid and certain.

SOWING CLOVER.

"A Subscriber," at Fort Gratiot, wishes to know if sowing clover with winter rye or wheat, will succeed as well on a sandy soil, as if sown in the spring; what quantity of seed per acre should be used, and the best mode of tillage.

Clover seeds are rarely sown with autumn crops in this country; the severity of the winter, except in favorable situations, destroying the young plant. The better way is, to sow it with spring crops, such as oats, barley, or spring wheat, or on winter wheat, as early as the spring will admit. When sown in the spring on winter wheat, its germination is greatly facilitated by going over the field after the seed is sown, with a light harrow or roller. There need be no fear that the wheat will be injured from this process. Spring harrowing wheat is extensively practiced in Germany, and is found of decided benefit. Sandy soils, when to be sown with clover, should have a deep plowing, that the young roots may by penetrating to a good depth escape the danger of a drought.

The quantity of seed sown varies much in different countries, and the purpose to which the crop is to be applied. In Belgium, the usual quantity is six lbs. to the acre, but the soil is in such fine tilth, that almost every seed germinates. In this country, from five to ten lbs. are used, but owing to our imperfect culture, it is found that the quantity of seed is too small, more frequently than it is too large. The English use more seed than most other people, allowing from ten to sixteen lbs. the average perhaps thirteen or fourteen. An annual top dressing of plaster, lime, or ashes, plaster being best, given in the spring of the year, is all that clover requires. Where lands are intended for permanent meadows, or pasture, other grass seeds, such as red top, timothy, orchard grass, meadow foin, white clover, &c. &c. in order to ensure a proper supply of roots and herbage, should be mixed with the clover seed. One of the best selections for sandy land, is the red and white clovers, with the tall oat and orchard

grasses. It is in a course of rotation with wheat, however, that the good qualities of clover are most conspicuous. For this purpose, no other seeds than the red clover should be sown, and this, plastered and fed off upon the ground by sheep, is one of the most ameliorating crops cultivated.

Planting Chestnuts—Flowers for Bees.

"Wm. Prine asks to be informed of the best time and manner of planting chestnut for fencing timber. Also, what kinds of shrubs and flowers it will be proper to cultivate for bees."

Michaux in his North American Sylva, vol. iii. gives the following directions for the culture of the chestnut:

"After the ground has been carefully loosened with the plow and harrow, lines are drawn six feet apart, in which holes about a foot in depth and diameter, are formed, at the distances of four feet. A chestnut is placed in each corner of the hole, and covered with about three inches of earth. As the soil has been thoroughly subdued, the nuts will spring and strike root with facility. Early in the second year, three of the young plants are removed from each hole, and only the most thriving is left. The third or fourth year, when the branches begin to interfere with each other, every second tree is suppressed. To ensure its success, the plantation should be begun in March or April, with nuts that have been kept in the cellar during the winter, in sand or vegetable mold, and that have already begun to germinate."

Mr. Hopkins of Cayuga county, made some experiments in planting chestnuts. In his first attempt, he kept the nuts till the setting in of winter, or December, when he planted them four feet apart every way, and not one of them grew. The next year he procured a quantity of nuts as soon as gathered, planted them immediately, and covered them superficially with leaves and light earth, at the same distance as before. Most of them came up and grew well. There can be no doubt, where the ground is so situated as to be free from the attacks of squirrels, mice, &c., that immediate planting after the nuts are gathered is the best mode, otherwise the plan of Michaux may be preferred. The best soil is a clay loam.

As to flowers and shrubs for bees, we know of none, the cultivation of which for this purpose alone, would be an object. Few of the cultivated flowers are frequented by bees, and neither such flowers or shrubs could be cultivated to an extent sufficient to produce much effect on the apiary. Farmers sometimes find a profit in growing buckwheat for both seeds and honey; but such honey is not of the finest quality. White clover is the best plant for the bee, and the farmer whose fields are covered with this rich herbage will want nothing better for his bees or his cows.

PITTS' THRASHER AND SEPARATOR.

At our request, Mr. PITTS has furnished us with the engraving and description of his thrasher and separator, published in another part of this paper. We witnessed the operation of this machine last week, at the barn of Mr. Bennett in Watervliet, and its performance equaled our expectations. It is a great saving of labor over the ordinary thrashing machines, the operations of thrashing and cleaning being performed at the same time. The bundles are fed to the machine at one end, and the clean seed, without a kernel being scattered, taken from the other. It has, wherever it has been put in operation, been received with the highest approbation, and was considered by the late Judge BUEL, as the best adapted for its purpose, of any machine he had ever seen. It was at his suggestion that Mr. Pitts removed to this city, for the purpose of manufacturing his machines, Albany being, from its water communication to every part, one of the best locations for such a branch of manufactures. We commend it to the attention and examination of our grain-growing farmers. Mr. Pitts informs us, that he intends soon to take a number of his machines into the western part of this state, where he will have an opportunity to test its merits with the numerous machines there in use, and he is confident that every examination and fair trial will increase the reputation of his machine.

THE CURCULIO.

We learn from several parts of the country, that this insect so injurious to some kinds of fruit, has proved uncommonly destructive to the morello cherries, so much so that in some districts where they are usually produced in abundance, few or none have been grown. The best remedy for this evil we have ever known, next to the destruction of the insect by repeated jarrings of the trees, which cause it to fall upon cloths spread below, (and this is a tedious process where many are to be operated upon) is to allow hogs to range in the orchard where they are planted, which will eat the imperfect fruit as fast as it falls, or should the worm leave the fruit on the tree and fall to the earth, will most likely be trampled to death before it can penetrate the hardened soil. We have a fine Mayduke, planted in a corner of a lot in which pigs usually run, and from its position, they frequently receive their food under it, and always near it. This tree uniformly produces large fine fruit, never troubled by the curculio; while some other trees of the same variety, but not so protected, not unfrequently have their fruit much injured or wholly destroyed.

It is well known, that the common wild or black cherry is never infested with the curculio. We have some trees of this variety that bear abundantly, yet we have never known them attacked by this insect. Is it not probable there is something about the tree offensive to

these depredators, and if so, would it not be good policy to plant a few of them with those trees, the fruit of which is most liable to suffer from their habits. We have seen something like this suggestion in a southern journal, and think it worthy the notice of the fruit grower. Only one serious objection occurs to its adoption, and that is the liability of the black cherry to be infested by the caterpillar. This difficulty might be obviated, however, by timely precaution, in destroying the colonies as soon as they began to spin their web, which causes them to be easily discovered.

NEW VARIETY OF BARLEY.

In 1836, a small farmer near Blandford in England, found at one corner of his garden plot, a tuft of some sort of grain, consisting of some 30 or 40 stalks, which ripened early in the summer, (June) and proved to be a very fine variety of barley, containing on an average 40 grains in each ear. The root was suffered to remain, from which, in the same year, he cut two more crops equally good; and he has continued to cultivate it with equal and uniform success. As he was ignorant of the way in which the seed came in the garden, it has been called "Providence barley," by which name it is now known. Its cultivation has spread rapidly, and two crops are usually gathered from one sowing, which should be early, (February or March.) The berry is of superior size and quality, and the yield is from 40 to 50 bushels per acre.

Such, in substance, is the account given of this grain, in the London Farmer's Magazine; and we notice it, not so much for the sake of calling attention to this barley, as to the importance of paying more attention to the introducing new and improved grains, and the ease with which it might be effected, if farmers would pay more notice to any new or fine roots or stalks of grain that may appear in their fields. The example of Le Conteur in producing many new and valuable kinds of wheat, and the late introduction of the Chevalier and Providence barley, not to mention the several new and superior varieties of corn, which American farmers have grown, proves satisfactorily the ease with which it can be accomplished, and the good results that would ensue.

English Opinion of our Present Embarrassments.

In the monthly numbers of the London Farmer's Magazine, are papers prepared with great care and skill, giving the best views to be obtained of the state of the grain crops, markets, &c. throughout the world; as well as a statement of the results which failures or excess of the same, produce on the commercial or financial interests of Europe and America. In following out the evils traceable to the short English crops of 1838-39, the writer uses the following language, the justness of which will be disputed by few:

"In addition to these direct evils of a deficient supply of food, the lessened consumption of raw material of foreign growth, particularly cotton, has deeply embarrassed the American market; more especially at the moment when her cotton hung heavy on our market, she was borrowing British capital on a large scale, to carry on her gigantic undertakings. Failing to realize for her produce, and her stock becoming unsaleable from the tightness of the money markets, remittances of specie became necessary to meet short engagements, and also to cover importations from England. This could not last long without exhausting the American banks, and hence nearly all of them connected with the cotton trade stopped specie payment. Allowing, liberally, for the imprudence of the American system of banking, and especially for the operation of the absurd attempt to prop up the price of cotton in the face of a natural diminution of demand, we still think the embarrassments in America are mainly attributable to the great falling off in the consumption of her produce in this country, consequent on our diminished harvests and dear food,—stopping the customary mode and amount of exchange with us, cutting off the means of borrowing capital for permanent investment, and putting a stop to the usual banking accommodations, by exposing the banks to the hazard of paying away the last ounce of gold and silver bullion to meet the unusual, extraordinary crisis of a heavy balance due to this country. * * *

We repeat the opinion previously expressed, that real and substantial amendment here, must precede similar amendment in the States, though we cannot and do not deny, that our condition will be materially alleviated by the restoration of confidence in America. We are glad, therefore, to see any symptom of improvement there, though we cannot but feel that a trying period of no short duration, lies before the American community."

The world is in a fair way to be driven into an appreciation of the importance of agriculture, and the great truth will yet be understood, that to the labor of the husbandman, to the production of actual wealth from the soil, more than to all the transmutations and changes such wealth may afterwards undergo, is national prosperity owing. The interests of the world are identified; it is only when these interests are disarranged by ignorance or cupidity, that general distress ensues.

IMPORTATION OF STOCK.—The American Farmer publishes a catalogue and the pedigrees of a list of horses, short horn cattle, sheep and hogs, imported by Messrs. H. SHEPHERD, of Shepherdstown, Va. and R. D. SHEPHERD, of New-Orleans. The horses consist of three colts, one of which cost \$3,000—the other two, about \$2,500 each; the cattle, of 12 heifers and one cow, all of the best Herd Book stock; the sheep, of four rams and eight ewes of the Leicester breed; the hogs, of one Berkshire boar, and five Berkshire sows, and two sows and a boar of the Suffolk breed. The cattle are said to have averaged \$500 a piece in England.

WORK FOR THE MONTH.

Saving Seeds.

Every farmer should endeavor to save such seeds as he may want, selecting from the best and most productive plants. There is scarcely an article cultivated by the farmer or the gardener, that may not be improved by selection and care. Plants, the varieties of which are liable to intermix, when intended for seed, should be planted at such distances from each other, that the pollen of their flowers cannot intermix. Beets, cabbages, turneps, squashes, melons, and even corn, should be planted at a distance from other varieties of the same plant, if pure seed would be had. Seeds keep well, by simply cutting them when sufficiently ripe, hanging them up in a dry place, until thoroughly dried, or until wanted. Herbs too should be saved, as more or less of them are wanted in every family for culinary or medicinal purposes. There are many who might, were it not for their negligence, secure an abundant supply of good seeds, and pot or sweet herbs, that when such things are wanted are obliged to rely on the greater forethought and charity of their neighbors.

Plowing Heavy Land.

Land that is heavy or tenacious should never be plowed when wet, and those who are summer fallowing fields of this stamp, should be cautious in working it when there is sufficient moisture present to render it adhesive. A disadvantage in two ways results from plowing such land when too wet; it not only breaks such land into large lumps, but the pressure of moving renders it so compact that they do not crumble readily or quickly, and the roots of plants find little nutriment among such masses; and the action of the plow in passing through a soil so conditioned, presses and smooths the bottom of the furrow in such a way, that when dry, an artificial hardpan is produced, only to be removed by the action of frost, or by still deeper plowing in a dry season. We have before us a pregnant instance of the bad effects of plowing heavy land when too wet. A field of three or four acres intended for corn and potatoes, of heavy, but rich land, and which has uniformly grown fine crops, owing to peculiar circumstances, could not be seeded or planted until so late in the season that further delay was not amissible, and the last plowing, striking out, and planting, was performed when the ground was saturated with moisture, and in a very unfavorable state. Dry weather followed, and the moved earth adhered in large lumps, hard as dried brick, but many of them much larger. The corn in some instances was unable to force its way through the dried crust covering the hills; and as the masses in such cases do not crumble readily, at hoeing there was not pulverized earth enough to place around the plants, and it will readily be conceived, that the air will circulate rather more freely than is consistent with vegetation, through a hill of potatoes or corn constructed of such coarse materials. Never have we before seen, what English writers call a locking up of the nutritive powers of the soil, effected so completely as in the present instance, and it now appears clear that former friability will not be restored, until the earth is submitted to the action of frost.

Destroying Weeds.

It cannot be denied by any one, that those pests of good farming, noxious weeds, have increased, and are increasing, at a most frightful rate in nearly every section of our country. Insignificant in their appearance or results at first, the farmer treats them with contempt, but before he is aware, they have obtained a hold on the soil, which enables the intruders to set him at defiance. The only safe course with weeds is to meet them early in the field, and allow them no rest until the extirpation is complete. Where plants are propagated only by seeds, as charlock, stein kroust, &c. they can be eradicated more easily, than when they are propagated both by seeds and roots, as johnswort, Canada thistle, elder, &c. If the seed of the first is not allowed to ripen, the danger is past, and consequently careful pulling will destroy weeds of this class; but where the roots retain their vitality, or in other words the plant is perennial, the labor of extirpation is much increased. In the Genesee country the stein kroust has become so prevalent in the wheat fields, that comparatively little precaution is used against it, and as large quantities of wheat are annually distributed from that section of the state to others for seed, the spread of that weed is of corresponding extent. So with the Canada thistle, that prince of noxious plants; it has become so extensively spread over most of the northern states, that enormous as the evils caused by its presence on a farm are, it excites little attention, and mixed with clover, timothy, or other grass seeds, is rapidly extending itself to districts and states hitherto exempt. As a first and important step, every farmer should resolve that no consideration shall induce him, to allow any foul stuff to perfect its seeds on his farm. Were this generally or universally done, the most effective cause of increase would be arrested at once. It is nothing less than suicidal to the prospects of a farmer, and inflicting great evils on those around him, to allow such plants as the thistle, johnswort, stein kroust, charlock, sweet elder, everlasting, daisy, &c. &c. to ripen their seeds, and propagate unmolested on his premises. Weeds then that cannot be pulled should be mown, cut or beat down, in such a way that no seed can possibly ripen, and it should also be remembered, that all mutilation or injury done to the leaves or stems of a plant, have an effect in retard-

ing the vigor or spread of the roots, and not unfrequently cause their destruction.

Aftermath or Rowen.

It has been questioned by some, whether it is not better to allow the grass that springs up after mowing to remain to perish, or protect the roots in winter, than to cut it for use as hay. The latter practice it is clear would exhaust the plant less than the first; but this second cutting makes such an excellent food for calves, colts, lambs, &c. that it is probable the custom of mowing for rowen will still be continued by many farmers. Where this mowing takes place, or where the grass is feed off by cattle, experience proves it to be a good plan to manure such meadows with well rotted manures, or compost, soon after mowing, and go over it with a brush or other light harrow; or if such an implement is at hand, a spiked roller will be found very useful for loosening the earth and preventing the increase of mosses, coarse grass, &c. Meadows, in which the valuable grasses are what is called running out, may be restored by scattering the seeds of the plants wished, with the compost and dragging them in at the same time. There need be no danger apprehended from this occasional scarification of the surface of a meadow; no good roots will be injured, and the mosses that bind down the roots, and prevent strong vegetation in the grasses, are displaced and their growth checked.

Budding or Inoculating.

August is the month for this operation, and the lovers of good fruit should not let it pass without improving the time for adding to their stocks of select fruit, or extending and multiplying those already possessed. Ample directions for the different processes of budding have been given in the former volumes of the Cultivator, and where good buds can be obtained, and the bark of the tree to be inoculated starts freely, the process is so simple, and the growth so certain, as to recommend the practice to all. Where grafting has been neglected, budding comes in as a valuable substitute, and can be adopted in some cases where the first can with difficulty be performed.

Ashes for Turneps.

A great object is gained by bringing turneps forward as rapidly as possible after they come up, as the principal danger of destruction or failure is before the rough leaf is put forth. In England, bone dust is usually drilled in with the seed, to hasten the early growth; here bone dust is comparatively rare, but a mixture of soot and ashes, or ashes alone, is found to be a very good application, particularly for the common turnep, and may be sown upon them broad cast, or scattered over the rows by hand. It will hasten their growth, prove a partial protection against insects, and improve the size and goodness of the roots.

VALUABLE RECIPES.

For Scours or Dysentery in Horses.

One fourth of an ounce of gum gamboge, half an ounce of aloes; half an ounce of saltpetre; reduce all to a fine powder; add flour and water till it makes a thick dough or paste. Divide it into four pills; give one pill every night and morning. Give the horse half an ounce of ipecacuanha, dissolved in about two quarts of hot water, by adding half a pint of this solution into a pail of water for him to drink every four hours. When the fever has abated, take a quart of oak bark, pour two quarts of hot water upon it, and let it stand till cool. Give the horse a pint of this bark tea in a pail of water, and let the horse drink of it freely.

R. M. W.

Another.—Take a table spoonful of saleratus, reduce it to a powder, and give it to the horse in a pint of new milk. Repeat the dose if necessary. This remedy has proved effectual in some severe cases. C. W.

Another.—Put into a junk bottle one pint of good gin, and one ounce of indigo; shake well together, and turn it down the horse. It will usually effect a cure in a very short time. A. H. H.

Another.—Mr. Robinson of Lake C. H. Indiana, states that the bark of the sweet gum, or liquid amber tree, of the west, is a certain remedy for the dysentery, in man or beast, and that in a multitude of cases, he has never known it fail.

Horn Distemper.

Spirits of turpentine rubbed in around the base of the horns, when the disease is in its incipient stages, will usually arrest its progress, and effect a cure. If it has so far advanced as essentially to lower the temperature of the horns, or horn, (for sometimes only one is attacked,) boring with a large nail gimblet on the under side of the horn, three or four inches from the head, will be necessary. If the horn is found very hollow at this place, another opening still nearer the head, may be necessary. The horns must be kept open, that the matter may freely escape; and they should be thoroughly syringed or washed out, twice or three times a day. Salt and water, or soap suds, is good for this. Allowing the matter in the horn to escape, relieves the distress of the animal, checks the inflammation about the head, and unless delayed too long, effects a cure.

Sore Backs, or Galls in Horses.

Rub white lead in sweet oil until a good paint is made, and apply a coating of this to the injured place. Milk will do, where the oil is not to be had. It is one

of the effective applications. Some for the same difficulty use a solution of vitriol in water, for a wash; but in most cases, the white lead is to be preferred.

Roup, or Gapes in Poultry.

Soap mixed with the food of chickens, or Indian meal wet up with soap suds, and fed to them, is said to be a cure for this disorder, that is so fatal to poultry.

For weak or Sore Eyes.

One of the best and easiest applications for weak eyes, is to take a small piece of copperas, (white is the best,) of the size of a pea, and dissolve it in a two ounce vial of soft water. When clear, this may be used for bathing the eyes, and with the best effects.

Bloating in Cattle.

Where other means have failed to reduce bloating or hoven in cattle, the volatile spirit of ammonia has frequently afforded almost immediate relief, owing to its chemically decomposing the gas generated in the stomach. The dose for a cow or ox, is a table spoonful; for a sheep, diluted with water, or other convenient liquid.

Cure for Wounds—King of Oils.

This invaluable remedy for wounds in cattle or horses, particularly the latter, has lately been brought before the public, by Silas Gaylord, of Skaneateles, and we have known some very surprising cures performed by it, in the case of severe wounds in horses. The following are the directions given for preparing the medicine:

- 1 ounce of green copperas,
- 2 " of white vitriol,
- 2 " of common salt,
- 2 " of linseed oil,
- 8 " of West India molasses.

Boil over a slow fire fifteen minutes, in a pint of urine; when almost cold, add one ounce of oil of vitriol, and four ounces of spirits of turpentine. Apply it to the wound with a quill or feather, and the cure will be speedily effected.

FARMING IN MISSISSIPPI.

Extract of a letter from a subscriber at Raymond, dated 23d June, 1840:—"Until twelve months past, agricultural operations have been conducted in this state with very little judgment or providence in regard to food for man and beast. But the pressure has brought us to our senses; and we are now endeavoring to 'live at home' as much as possible. We are striving to raise our own meat and bread at least; and are succeeding beyond our expectations—endeavoring also to improve our stock of cattle and hogs; but find much difficulty in obtaining good stocks, except when several unite and send an agent expressly for the purpose.

"I am trying experiments this year, with millet, sugar beet, ruta baga, and mangel wurtzel. They promise well, thus far, and the first will probably suit us for rough winter food for mules, oxen, and cows—I mean the hay or straw. The three last will probably yield well—but the yam and Spanish potatoe can be raised here so readily, and our servants are so much better acquainted with their cultivation, that the culture of these is not likely to be superseded by those. This potato is probably as valuable for food for man and beast, also; and it is not difficult to raise from 3 to 500 bushels to the acre.

"I found that my cattle and hogs were much benefited last fall, by an abundant growth of peas and pumpkins, raised in the corn field. And, having an oat field this year, under the same enclosure with corn, which prevents stock from being turned in, I am now plowing in the oat stubble, and harrowing in peas, sown broadcast. In the corn ground, the peas are drilled between every row at the last plowing.

"The northern counties of this state, present a fine opening for stock growers. The counties of Marshall, Fayette, Yalabusha, &c. &c. are well watered, suitable for clover and the grasses; and the southern counties would furnish a market for all the superior stock that could be raised. It would be an excellent business for a Northern man, and he might be assured of health, comfort and profit.

"A few of us in and around this village, have paid some attention to the *Morus multicaulis*, and silk raising. The experiments this year, in feeding the worms, were satisfactory and encouraging; they fed well, and spun well, with very little loss; probably not three per cent. None however entertain an idea of going into the business largely or exclusively. It is thought favorably of for employing the house servants and children, and I doubt not, that the business will extend until the employment of such persons, in this way, becomes general."

MAKING BREAD.

A late French journal states that an important series of experiments is now going on in the city of Paris, by order of the government, and under the direction of a committee of bakers, to test the value of a new discovery in bread making, that promises the most important results. In the new mode of preparation, the flour that formerly made 100 lbs. of bread, now yields from 120 to 125 lbs. The discovery consists in an improved mode of fermenting it, by which a greater quantity of water combines with the gluten, and the nutritious qualities are more fully developed. A loaf of the new bread is found to be equally nutritive with the old, and decidedly improved in flavor.

DICTIONARY OF TERMS

USED IN

Agriculture and its Kindred Sciences.

CHEMISTRY. A science which teaches the relation which matter bears to other matter, and the manner in which the laws of affinity, vitality and organization, perform their several functions. Agricultural chemistry is limited to a knowledge of the substances which enter into animals and vegetables, to serve them for nourishment; and to the study of all the agents which aid them in accomplishing these functions. Agricultural chemistry first assumed a definite form under the labors of Davy and Chaptal, and though but a comparatively few years have elapsed since the attention of chemists was directed to this object, the benefits that have already resulted, are immense. It is this which has taught the analysis of soils, the nature and action of manures, and the different substances that go to make up the several parts of plants, and of course the materials that should be furnished them to forward their growth and mature their seeds. Farmers knew how to make the earth produce straw, but to fill the ears with grain, was beyond their power. Chemistry came to their aid, and taught them that manures containing phosphoric salts, and those that furnish azote and gluten, are the ones that can alone tend to such a result; in other words, that the soil must have returned to it as much of these essential ingredients as cropping was taking from it, or the production of the grains would be impossible. It has been said that chemistry has not taken the lead in any measures of decisive utility to agriculture; that it has only explained results which experience had already discovered. But it should be remembered that the results which experience had obtained, gave, under ordinary circumstances, no data by which such results could be repeated. Chemistry gave the response, which was in vain elsewhere asked. She taught why certain results were in some cases obtained, while in others, to the common eye the same, gave returns totally different from those expected; and the career of agricultural chemistry, though it has already performed much, can hardly be said to be fairly commenced.

CHERRY. (*Prunus*.) There are two kinds of the cherry tree which are of considerable importance; the first, the wild or black cherry of our forests, *Prunus virginiana*, is much valued for the excellence of its wood, which is used extensively for the manufacture of furniture. It is one of the most beautiful of our forest trees, throwing up a tall straight trunk, from six to nine feet in circumference, some seventy or eighty feet. While the use of liquors was tolerated as fashionable, the cherries of this tree were in great demand, for the making of cherry rum, cherry cordials, &c. This kind of cherry would be more extensively planted, were it not liable to be attacked by multitudes of worms, which in open lands not unfrequently divest them of their entire foliage. The other kind of cherry is the cultivated variety, (*Prunus cerasus*), and though too little attention is paid to this tree, it is one of the most valuable of our fruit trees, easily grown, very hardy, and early in the season. Cherries are of two kinds, as cultivated in our gardens; the heart shaped and round varieties. Of the first, the Black and White Tartarian, Black Heart and Elton, are the favorite kinds; of the latter the Early May, May Duke, Late Duke, and Waterloo, are highly esteemed. Cherries flourish best in a dry and rather light soil; and a heavy wet or clay soil is not only injurious to the tree, but the fruit on such trees is of an inferior quality.

CHRYSAIDS. The life of insects is usually divided into three stages, that of *larvæ*, *chrysalis* or pupa, and *perfect insect*. Of the first of these stages, the caterpillar, grub, maggot, &c. afford examples. During this stage they are voracious eaters, and this appears to be the sole object of this period of their existence. In the second or chrysalis state, the worm usually casts off its exterior covering, and appears in a hard case or shell; in which it generally passes the winter in an immovable state. The round smooth case of the chrysalis of the melolontha or May bug, and irregular shaped envelopes of the *Lepidoptera*, are examples of this state familiar to all. The perfect insects are seen in the flies, butterflies, beetles, &c. and in this state few of them pay much attention to feeding, some indeed never eat at all, the great object of all being the perpetuation of their species. Some insects spin a covering to the chrysalis; the cocoon of the silk worm being of this kind. Insect life in all its stages affords an interesting and instructive study, and from their influence on the productions of the farm, insects have not as yet received the attention they deserve.

CIDER. The expressed and fermented juice of apples. To produce good cider, it is necessary that the fruit should be ripe, that it should be sound, that it should be all of one kind, and that there should be a perfect grinding of the apples. If the apples are not ripe, the saccharine matter necessary to make a good fermented liquor is not developed; rotten apples impart an unpleasant flavor to the liquor, and different kinds of apples afford a liquor that will not ferment equally or perfectly. When the liquor is pressed from the pomace, it should be put in sweet, clean barrels, allowed to ferment, and filled up occasionally that all the feculent matter may escape. It may then be fined by isinglass, or drawn off for bottling. Where making good cider is an object with the farmer, it is usually racked off after the fermentation is closed, and time allowed for all sediment to leave the liquor, into clean new barrels furnished

with sulphur, and will then keep good for a considerable length of time. Cider was formerly used extensively for distillation into apple brandy, but is now but little used for that purpose. According to Brande's analysis of fermented liquors, wines contain from 25 to 10 per cent of alcohol, and cider from 10 to 5 per cent. Cider makes an excellent vinegar, and large quantities are consumed for that purpose. The best cider made in the United States is produced in New-Jersey, owing probably to the skill in manufacturing, more than to any peculiar excellence of fruit or singularity of the soil.

CLAY. A kind of earth very abundant in soils, and of great use in the arts. The basis of clay is alumine, which is seen very pure in some specimens of the alum of commerce. A leading feature of alumine is its strong affinity for water, it requiring a great degree of heat to effect an entire separation; hence soils in which this material abounds, or those which are clayey, are most usually wet in proportion to the quantity of this earth existing in them. Next to silica, clay is the most abundant of the earths, and is of extensive service to the agriculturist. Indeed, without its presence, vegetation would be scarcely possible, and cultivation could not exist. To the presence of clay we owe the capacity of soils to retain moisture in any degree, since the other earths would leave it so porous, that water would pass through as readily as through a sieve. Mixed with lime, clay constitutes marl, of which such use is already made in fertilizing the soil, where these ingredients appear to be wanting. On soils so sandy as to be porous, the application of manures produces only a partial good, it soon sinking beyond the reach of the roots of plants. It is on these that clay may be applied directly with excellent effect. In order to incorporate it with the soil readily, clay should be dug and exposed to the air and frosts, that it may more easily fall to pieces when applied to the soil. Plowed under in large masses, it not only does no good, but is in the way of cultivation, and fineness is indispensable to its utility. Burning clay is extensively practiced in some parts of England for the purpose of farming. This operation destroys its tenacity, and by lessening its affinity for water, renders the soil with which it is mixed more dry and friable, and consequently much better adapted to the production of grain crops. Clay usually contains more or less of the oxide of iron, and to this cause its red color when burned is owing. The more pure kinds are manufactured into ware of various degrees of fineness, pipes, delf, Liverpool, wedgewood and porcelain.

CLIMATE. By this term is to be understood "the character of the weather peculiar to every country, as respects heat and cold, humidity and dryness, fertility, and the alternations of the seasons." Heat or cold do not depend altogether on geographical position; there are a multitude of causes that tend to increase or decrease these, such as oceans, mountains, plains, place on continents, local or general currents of air, and others that will at once present themselves, as influencing climate in these respects. The western side of continents is found warmer than the eastern, a fact accounted for by the general prevalence of westerly winds, which in their passage over oceans are raised in their temperature, while winds that pass over land for the same distance are usually cooled in the same degree. Thus the coast of the United States that borders on the Pacific, is altogether warmer than the eastern or Atlantic coast, the territory at the mouth of the Columbia, which is in the latitude of Mackinaw or Montreal, having the climate, and producing the same vegetables, as Carolina and Georgia. On the different sides of the Atlantic, too, it is found the same difference prevails; places having the latitude of Quebec, in Western Europe, producing the grains and plants of Pennsylvania and Maryland. The elevation of any country above the sea has also a decided effect on the climate. Thus, under the Equator, in ascending high mountains, the temperature and the climate of widely different regions may be passed in a few miles or hours. The clearing of a country has also a great effect on climate; as forests prevent speedy evaporation, and retain the water that falls on the surface. All other circumstances being equal, a cleared country is warmer than a wooded one. The Cape Verd Islands, by being deprived of their woods, have become more sultry, the springs have mostly dried up, and the health of the inhabitants seriously affected. Is it not probable that many eastern countries, once fertile and filled with inhabitants, have become wastes, if not actual deserts, in consequence of the face of the earth having for centuries been wholly denuded of wood? The great lakes of this country, containing as they do about one-half the fresh water on the globe, and from their great depth only slowly feeling the influence of the atmosphere, whether in cooling or in heating, have perhaps more influence over the climate of the countries bordering upon them, than any other single cause.

CLOUDS. Every man whose business is in the open air, is more or less a meteorologist; and none find an acquaintance with the clouds, and the power of judging of the future by their present appearances, of more essential service than the farmer. In assisting to form a correct decision with regard to the weather, a barometer is a great help; but where such an instrument is not at hand, the clouds, by their different structure, height, and density, will enable the scientific or even the ordinary observer to calculate more accurately the results of their presence. Clouds are a watery vapor, and dif-

fer from fogs only in their greater height, and in some cases, less degree of transparency. The theory of the formation of clouds, proposed by De Luc, is, that water in the form of vapor, and before it takes the form of clouds, exists in a gaseous state, which is the reason why the air in the higher regions of the atmosphere is always dry. The observations of Saussure and others on the mists or fogs occurring at considerable heights, seem to prove that clouds are collections of small vesicles, in the formation of which electricity acts a conspicuous part. Some of these vesicles or bladders seen by Saussure on the Alps, were of the size of small peas, and almost every one has observed them of the size of millet seed. Were these solid drops of water of that size, it is clear they could not float as they do, and the little water they afford, is proof they are only bubbles. Hube says, the clouds differ from fogs only in the character of the electricity they contain; that of the first being negative, while that of the latter is positive. Howard was the first who reduced clouds to a system, and by distributing them into three principal formations, has greatly aided the meteorologist. These are: 1. *Cirrus*. This cloud is the highest of all clouds, and approaches the elevation of the northern lights, if indeed the two phenomena are not intimately connected. Humboldt on the Andes, and Webb on the Himala, found this cloud as much above them, apparently, as when on the plains. It shows itself as a few fine and delicate white fibers, multiplying themselves transversely, and when it forms alone, and not in the neighborhood of other clouds, it may be considered as one of the best indications of serene weather. 2. *The Cumulus*. Masses of clouds of a conical or aggregated form, the region of which is the middle atmosphere, and which usually increase from a horizontal basis upwards. This cloud generally moves with the current of air nearest the earth. Alone, this cloud never produces rain. It usually forms during the warm summer days, and as it piles its towering masses in the west or the east, it furnishes much of the most splendid scenery of the heavens. 3. *Stratus*. Extended layers of clouds, connected and horizontal. This cloud is of moderate density, occupying the lower region of the atmosphere, frequently resting on hills or mountains, and touching trees, spires, &c., in its passage. Rain rarely falls from the stratus, but to this cloud we owe most of the dark, cloudy, homely days, that are experienced in this latitude. The formation of the rain cloud is more clearly seen in the summer season, than at any other time. The cumulus is usually the first cloud that forms, and appears in irregular, isolated masses, scarcely moving with the wind. If, at this time, stratus appears at the base, and a rapid horizontal enlargement of the mass ensues, rain may be expected; if, in addition to this connection of the cumulus and stratus, the top of the cloud continues to rise until long streamers of cirri project from the summit, a thunder shower will be the result. No fact in meteorology is better ascertained than that electricity is never developed in a cloud to any extent, unless attended by these streaming cirri. Every observer of such things, must often have witnessed during our summer months the progress of the cloud from the first mass of cumulus, to the condensation of the stratus, the spreading of the towering cirri, and the bursting of the first thunder peal. Clouds exercise a vast influence on vegetation, independent of the water with which they furnish the earth. The temperature of the seasons is in a great measure depending upon their frequency and density, and not unfrequently a knowledge when rain is about to fall, is of the most essential service to the practical operations of the farm.

Period of Gestation in Cows.

One of the most satisfactory experiments relating to the subject, on record, is the one made by Earl Spencer, and the particulars of which are given in the second number of the English Agricultural Society Journal.

The table given contains the results in the case of seven hundred and sixty-four cows, and the following statements abridged from the paper, will exhibit some of the most important of the details:

First. It appears that the period of gestation varied from 220 days to 313 days; or no less than 90 days. Lord Spencer was, however, unable to rear any calves produced under 242 days. All under 260 days, and over 300, he thinks are decidedly premature, or irregular.

Second. As 314 cows calved before the 284th day, and 310 after the 285th day, the average period of gestation must be considered as between 284 and 285 days; although the time stated in the work on Cattle by the London Society states it at 270 days.

Third. It appears, that omitting those considered as premature or irregular, the cows whose period of gestation did not exceed 286 days, produced 233 cow calves, and of bull calves 234; while from those whose period exceeded 286 days, the cow calves were only 90, and the number of bull calves was 152. This certainly gives some support to the opinion so prevalent among farmers, that when a cow exceeds the usual time, the produce will be a bull calf.

Fourth. There were 7 cases of twin cow calves; 5 cases of twin bull calves; and 11 cases of twin cow and bull calves. Earl Spencer has never had a case in which the sexes were different, in which the heifer was a breeding one; they have uniformly been what are termed *free martins*. The cattle of which the above record has been kept, are the pure improved Short Horn breed, and one of the finest herds in Great Britain.

Communications.

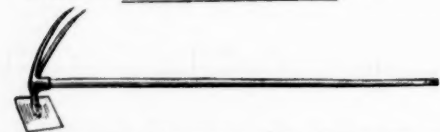
FARM GATE.

MESSRS. GAYLORD & TUCKER—I have seen several plans of farm gates in your paper. I send you one (fig. 72.) which experience proves to be an excellent gate, for several reasons; one is, it is made without nails or iron; another, it is durable; and another, it never sags.

EXPLANATION.
A, A, Posts, 8 and 10 feet long, hewed square above the ground.
b, Bed piece, 10 feet in clear, tenanted into the posts, and pinned firm.
c, Block of wood 3 inches thick, and 6 inches wide, 14 feet long, tenanted into post 6 inches; two inch tenant; shoulder on each side; put in firm—hole 2 inches to receive the upright shaft of gate, which is made round; rounded also at the bottom, and fitted into the bed piece.
d, Slat of gate, tenanted into uprights and pinned.
e, Two beams, one on each side. Pins of wood made of seasoned timber. Uprights 3 by 5 inches.

Troy, Mich. May, 1840.

A. C. H



Implement for Harvesting Ruta Baga—[Fig. 73.]

MESSRS. GAYLORD & TUCKER—I often hear an objection made to raising ruta bagas, because of the labor of harvesting them. I have a mode, which is very expeditious, and as I have never, to my recollection, seen any thing like it published, although I have been a subscriber to the Cultivator since its commencement, I am induced to send you a description of my ruta бага hook, and if you know of no better implement for the purpose, and think it would be useful, you will please publish it.

My hook is made with a strong eye, like a common hoe, and the blade is a piece of handsaw plate, riveted on to the eye, 4 inches by 6; and the hooks on the other side are about 6 inches long, with a strong handle like a common hoe.

The man walks along the row, and with a light blow of the blade cuts the top and turns it, and with the hook pulls the bottom. Any common hand may top and pull from 6 to 8 hundred bushels in a day.

Above you have a rough draft of it. Our crops look promising for the season. Yours,

ERASTUS SKINNER.

Prattsburgh, June 12, 1840.

DRESSING FLAX BY MACHINERY.

MESSRS. EDITORS—Having made some experiments in the use of machinery, I send you the result for publication, if you think best. About 18 months since, I purchased a thrashing machine at an expense of \$85. It has worked to my satisfaction, as I have found it use a great saving of labor. Last fall, having fourteen acres of flax, from which I wished to take the seed, I concluded to try my machine, and found it the most expeditious method of taking off the seed which I have ever seen. It was done by the attachment of one small wheel, which reduced the motion of the cylinder three-fourths, and running the band across, turning the cylinder the opposite way from which it runs when thrashing grain; then put a stick across on the back side of the cylinder, just so as to clear the teeth in the cylinder, and make it fast on the frame at each end, when it is ready for use. I put the flax in on top of this stick as far as there was any seed, and pulled it out as quick as possible. Every particle of seed was taken off, without injury to the flax. I think one man can take off more seed in this way, than three can in the ordinary way by whipping it off on a stone.

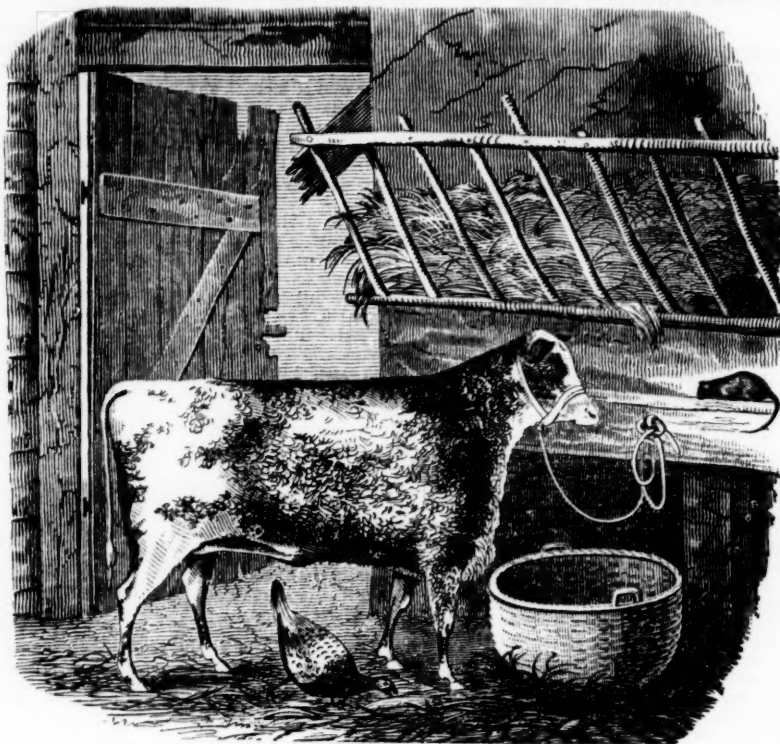
My next attempt was to fix a machine to the horse power to dress the flax; and this I did at an expense not to exceed \$5, and five day's work. It works as well as ever I saw one work by water. Two hands can break and dress of good flax one hundred pounds a day. It is worked by two horses with ease. If it is requested, I will give a description of the flax dressing machine. (We shall be glad to receive it, accompanied with such drawings as may be necessary.—Eps.)

I am fixing a circular saw to saw my wood; and I design to attach a cross-cut saw to the horse-power, for the purpose of sawing logs, which I think can be done, and a great saving of labor be thereby effected.

I saw an inquiry in one of your papers respecting the best and cheapest thrashing machine. The preference was given to the one horse power. Almost every one thinks his own the best. I think mine the best, because it is the cheapest and managed with as little help as any other. Three men and one boy are sufficient to thrash 150 bushels a day; and 500 bushels may be thrashed in a day with help and team enough. So you see we can thrash on a moderate scale or more rapidly as circumstances require. My machine is a lever power, and can be used with one or more horses up to six or eight. It was made at Scaugatcook Valley.

Berlin, Conn. April, 1840.

G. N. G.



PORTRAIT OF ONEIDA—[Fig. 74.]

MESSRS. GAYLORD & TUCKER—I have to acknowledge the receipt of an impression from the "block" left with Mr. Pease of your city, and must confess that my mutilated drawing has been in some degree restored by the corrections and alterations of that artist, whose taste and feeling for the subject enabled him at once to detect and amend some of the absurdities committed in the engraving room of the celebrated Mr. Adams, where the "tool" had, in this instance, almost made a burlesque of the subject. It was not, however, in Mr. Pease's power to recut the whole block; you must, therefore, accept my assurance that the animal itself was, like other good calves, clothed in a thick mossy coat of fine hair, the engraving notwithstanding.

Having attempted an apology for the much that will strike you about the portrait as un-artist like, I most cheerfully accede to the wish you have expressed, that it should appear in the Cultivator; for I think it an admirable illustration of my favorite axiom, that the only desirable size is where we find the greatest weight in the smallest relative compass.

The original drawing was made by myself, from a heifer calf when about six months old. She was of the improved short horn family, and of course a "Head Book" animal; bred on one side from Mr. Whitaker's stock, and on the other side she is descended from Mr. Wetherell's herd; her weight at the time was five hundred and sixty pounds, by no means an extraordinary one, unless her apparent mediocrity of size was taken into consideration, which from its symmetrical proportion, was most deceptive; the best judges never estimating her within fifty, and some an hundred, pounds of her ascertained weight. I therefore selected her, as embodying in a high degree, (though only a calf,) my apothegm, that weight for inches, not surface, constitutes true size. I believe it will be found that this form of animal necessarily combines constitution, substance and beauty, and consequently constitutes what is most profitable in neat stock. I have, however, had very frequent occasions to remark, that where there is great

justness of proportion, a due relation between the several parts, and a light of fall, that the common observer is apt to under-estimate the size, and especially the weight of such animals; oftentimes overlooking the very best of the herd, while his eye is caught by an individual possessing some monstrous development, altogether out of proportion to the surrounding parts. An appearance of size and weight is thus often assumed which is unreal; these very projections standing out the more conspicuously from deficiencies elsewhere, which escape observation, making on the whole an uneven carcass of deceptive weight, though abounding in superfluous.

On reference to the portrait, it will be seen at once, that "Oneida" combined great weight in the most valuable points, with an unusual lightness of of fall: her head, neck and shanks being quite small, and the plates of the abdomen sustaining its contents on a nearly horizontal line.—The neck vein is so full as to blend the neck beautifully with the shoulder point, which is small, and the elbow lays well to the side. She is remarkable for the laying out of the fore rib, and is full in the crops, the width of her loin extending itself nearly the whole length of her back; she measures well across her hips, which are level, the rumps high and fleshy, with great length of quarter, and her twist is well let down; her flank is full and heavy, and her general appearance indicating "mellow handling" and great "proof" two points I think indispensable.

I have in my portfolio the sketch of a calf about the same age as "Oneida," exhibiting both size and weight, but neither of them, in my opinion, of the right kind.—Should you think the subject worth pursuing farther, I will make a drawing of one of those "Beat-that-if-you-can" breed, by way of illustration, and send it you, with some few remarks on the calf himself. But if you think my "hobby" has been rode sufficiently for the present, I'll stable him, and look on, with all imaginable good nature, while some one else takes his turn.

Butternuts, July 15, 1840.

R.

THE PLACE TO DIG A WELL.

MESSRS. GAYLORD & TUCKER—I saw in your paper an inquiry for the best mode of finding water, or rather a place to dig a well. I have had some information on the subject, but do not profess to be a very experienced hand at the business. The way I manage, is to choose a clear day, when there are no clouds to interfere with the eye; about 1 or 2 o'clock, I go out to the place I wish to look for water; I turn my back toward the sun, and look toward the sky, to examine the vapors that arise from the ground into the air, and if there is a vein of water near in that direction, there will appear a vapor to rise quick to a certain height, and then it will move off on a level, in the same way that the smoke will rise from a chimney over a very hot fire of coals, where there is no smoke, and will rise as high above the surface as the water is below the top of the earth. The facts are, that water must have vent, and the deeper in the earth the water lies, the harder the pressure and the higher it will rise. Now, as I have stated, I am not a professed water witch, I would wish to hear from those of more experience, as there are many who do profess to know, and say that they can trace a vein of water not larger than a rye straw, that lies 60 feet under ground, and tell as to the quality of the water. I know that many men wish to keep such things secret, but I think it the duty of every man or woman that can be

useful to their fellow beings, to do so. As to qualities of water, all I know is, that salt water gives a stronger cloud than fresh, and lime water gives a whiter cloud than pure soft water. Any information that can be given on the subject, will be thankfully received.

Newark, Ill. May 30, 1840.

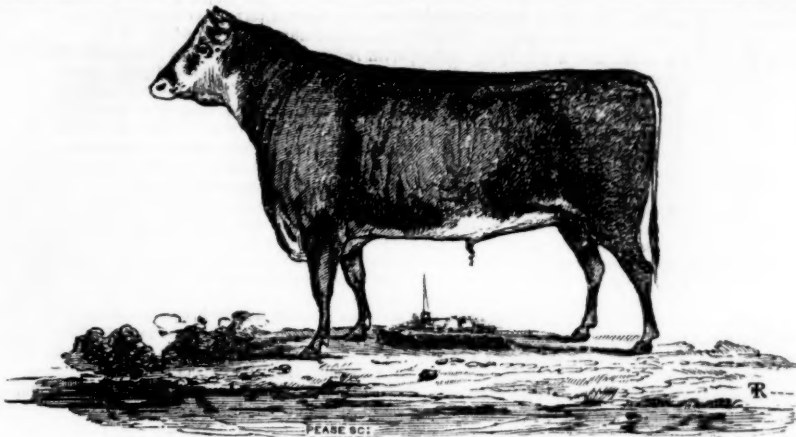
W. STOWELL.

HIVING BEES.

In the 7th volume of the *Génese Farmer*, page 236, is a description of an easy method of hiving bees. If it would answer the purpose as there described, it would be valuable. I have put up a board in the manner there described, but have not had a swarm on it yet, although I have had a number this spring. Perhaps the description is not right. If you, or any of your correspondents have tried it, I should like to hear how it answered. Perhaps the board should be laid on the bench or stand on which the hives are placed, instead of the ground. Any information on the subject would be very acceptable to

A YOUNG APIARIAN.

NOTE.—The "easy method" referred to above, was contained in an article from the *Yankee Farmer*, purporting to be a description of the plan pursued by Mr. Moses Winslow of Westbrook, in hiving bees. We know nothing more of the matter than is contained in the extract alluded to, never having seen the plan recommended pursued.



Portrait of Mr. Bement's Hereford Bull, Dallimore—[Fig. 75.]

HEREFORDSHIRE CATTLE.

I was much gratified on perusing the excellent "Essay on Cattle," in the February number of the Cultivator, from your talented correspondent, Henry S. Randall, Esq. His short and pithy history of several varieties, is well calculated to arrest the attention of farmers, and guide them in the selection of that breed best adapted for the different sections and purposes for which they may be wanted; whether for the dairy, yoke or shambles. For instance, where the climate is mild, and a full and rich bite of grass at hand, and the dairy and beef the object, I would by all means recommend the Durham; but, where the climate is cold, seasons short, land rough and hilly, with a short and sweet bite of grass, with labor and beef the object, I would recommend the Hereford or Devon; and at the Northwest, in Missouri, Illinois, and Wisconsin, where only beef is wanted, and where they have to be driven any great distance to a market, from what I have seen and can learn, the Hereford certainly would be preferable, being hardy in constitution, good travelers, of great size, will fat at an early age, and will make more pounds of beef with the quantity of food consumed; and when better known in market, will command the highest price. At the south, where the climate is warm, I should think the Ayrshire or Devon would be preferable.

Dallimore, a full bred Hereford bull, whose portrait stands at the head of this article, was imported with a two year old heifer of the same breed, in 1839. He was two years old the 6th of June last, bred by J. D. Kedwards, Esq., Westside, Herefordshire, England. The heifer was bred by C. A. Maison, Esq. of Torrington, and was two years old last fall. Having had them in my possession for more than a year, enables me to form some opinion of their qualities. They were much bruised, and reduced very low in condition, (from the effects of a long and boisterous passage, and on short allowance,) when they arrived at my farm; but on turning the heifer into pasture with my other cattle, without any other food but grass, took on flesh more readily than any other animal I have ever had. She dropped a fine bull calf on the first day of November last, and was then fit for the butcher.

Being rather inclined to be vicious, I did not cause her to be milked, but let the calf run with her until he was six months old, when she became so gentle and quiet, we milked her without much difficulty; and if, under such circumstances, she is a fair specimen of the breed for milk, they have been most woefully belied, for when turned out to grass in June, seven months after calving, she has given seven quarts of milk per day. I consider it bad policy, and I believe it is so considered by every one who has paid any attention to the subject, to let the first calves suck their dams. Here, I must confess, I was not a little disappointed, for I had been led to believe they were the poorest milkers to be found of any breed. I have been informed, however, that their milking qualities have been increased of late years.

There is nothing, (except great size of her age,) very prepossessing in her appearance. Her marks, however, answer the description of this breed, given by Youatt, in his excellent history of "British Cattle," in the "Farmer's Series" of the "Library of Useful Knowledge," which I have transcribed.

"The Herefordshire white faced cattle," says Youatt, "with the exception of a very few Alderney and Durham cows, have almost exclusive possession of this, (Hereford) county. They are usually of a darker red; some of them are brown, and even yellow, and a few are brindled; but they are principally distinguished by their white faces, throats, and bellies. In a few, the white extends to the shoulders. The old Herefords were brown or red-brown, with not a spot of white about them. It is only within the last fifty or sixty years that it has been the fashion to breed for white faces. Whatever may be thought of the change of color, the present breed is certainly far superior to the old one. The hide is considerably thicker than that of the Devon, and the beasts are more hardy. Compared with the Devons, they are shorter in the leg, and also in the carcass; higher, and broader, and heavier in the chine; rounder and wider across the hips, and better covered with fat; the thigh fuller and more muscular, and the shoulder large and coarse."

"They fatten to a much greater weight than the De-

vons," continues Mr. Youatt, "and run from fifty to seventy score. A tolerable cow will average from thirty-five to fifty score. A cow belonging to the Duke of Bedford weighed more than seventy score, and an ox belonging to Mr. Western, one hundred and ten score. They are not much used for husbandry, though their form adapts them for the heaviest work, and they have all the honesty and docility of the Devon ox, and greater strength, if not his activity. The Hereford-ox fattens speedily and at a very early age, and it is, therefore, more advantageous to the farmer, and perhaps to the country, that he should go to market at three years old, than be employed as a beast of draft."

"The Devons and Herefords are both excellent breeds, and the prejudices of the Devonshire and Herefordshire farmers for their peculiar breed being set aside, a cross of the one will often materially improve the other. The Devon will acquire bulk and hardihood, and the Hereford, finer form and activity."

I have tried this cross, and have now two calves, a bull and heifer, and they are certainly very beautiful animals, and so far, I am well pleased with them. The heifer is a little coarser in the head and neck, than I could wish, but has many very fine points, and on account of their great length, size, and dark, rich, red color, are well calculated to please our eastern and northern farmers.

"I am quite aware," says John Ellman, Esq., that eminent breeder of South Down sheep, "that it is a well received opinion amongst all our first-rate breeders of cattle and sheep, that the first cross generally succeeds, but that if you attempt to go on with that cross, you will breed very inferior animals; and indeed, it is impossible to carry it on. I am not of that opinion. I am quite aware of the unceasing attention and great skill it will require to counteract the great difficulties to be encountered; but I do not think them insurmountable."

Now, according to the doctrine that "like begets like," I cannot see why two good animals, and especially where the resemblance is so nearly alike as the Herefords and Devons, may not produce a third equal to either.

I am aware that in crossing very superior with very inferior animals, the improvement will be much more conspicuous, and the hazard of continuing the improvement greater; but let me ask, how has the great improvement in all kinds of domestic animals been effected, unless by crossing and selecting only the best for breeding? Are not the present beautiful, and I might say magnificent, Durham and Hereford cattle, splendid South Down, New Leicester and Bakewell sheep, superior Berkshire, Bedford and other improved hogs, a made breed?

"The Durham breed of cattle," says Mr. Knight, "appears to possess the power of eating and digesting a much larger weight of food than the Hereford. The only instance in which the experiment, I believe, was ever tried, has been given an account of in Youatt's work on cattle."

"Three Hereford and three Durham cattle were put into stalls to be fattened on the 3d of Nov. The weight of the Herefords was then 33 cwt. and that of the three Durhams 38 cwt. and 14 lbs. Between that period and the 30th of March, when all were sold in Smithfield, the Durhams had consumed 12,755 pounds weight more of turneps and 1,714 more pounds of hay than the Herefords, but the Durhams, notwithstanding the large size when put to fatten, and the greatly larger quantity of food consumed, sold for only twenty shillings more per head than the Herefords, and such, I believe, will ever be the result of similar trials, when one class of animals has been properly fed, and the other over-fed, the merits of the breed equal."

At the meeting of the Smithfield Club in Dec. 1839, the Herefords took the four first premiums in class 1 and 2. In class 3d the second prize, and second prize in class 7. In the prizes for extra stock, the Herefords took the only prize. In the list of commendation, the Hereford stands 13—Durham 8—Sussex 1—North Devon 1.

I have examined the Hereford cattle, lately imported by our spirited and enterprising citizen, Erasmus Corning, Esq. and Wm. H. Sotham, as noticed in the last Cultivator. I must confess I was greatly disappointed in the size and general form of the cows, for they were apparently as large as the Durhams, and possessing the broad loin,

large capacious bodies, deep, broad and projecting brisket, but with a coarser head and neck, which to those familiar with the Durhams, would appear oxy, if I may be allowed the expression. The shape and size of their udders would indicate fair milkers. Mr. Thornton, the person who has charge of them, informed me they gave on an average full a middling quantity of milk.

Mr. Corning has sent out for a bull of this breed that has taken several premiums, which he expects to arrive in the course of the season, as the owner would not part with him until after he had used him this summer. This will enable him to make a fair start, and we shall soon be enabled to ascertain how they will compare with the Durhams, Devons and native stock.

Dallimore, as you perceive by the portrait, is in form and symmetry a very beautiful animal. He has all the fine points so conspicuous in the Durham. His low brisket, deep and broad chest, are pretty sure indications of a vigorous and strong constitution. He is full of life and vigor, and as playful as a kitten. He is not fat, but in good growing condition, and by an application of the tape, he measured in girth 6 feet and 4 inches; in length, from root of the tail to between the horns, 6 feet 8 inches; around his arm, 15 inches; leg, below the knee, 7 inches; around the brisket and shoulders, 6 feet 10 inches; neck, 3 feet 2 inches, and 4 feet 5 inches high. He was just two years old when measured. I do not give this as being extraordinary in size, for he has never been pampered or even fed on grain, but has been well cared for, and in the winter, until February, has had half a bushel of ruta baga per day, and as much good hay as he would eat.

Mr. Kedwards, the breeder of Dallimore, has been the winner of a great number of prizes for the Hereford cattle, and whose herd lately sold at auction at prices which indicate the high estimation in which they are held in England. A cow sold for £80, (\$355); a heifer and calf for £81, (\$360); a calf, ten days old, for £79; a yearling bull for £80, &c. and the cows averaged over \$133 each.

I agree with Mr. Randall, that "to the pure improved Durham we must look for the basis of the desired improvement;" but "that a cross with the Devon or Hereford would sacrifice milking qualities," I must, with all due deference, dissent. "Facts are stubborn things." I have now in my herd heifers of the Durham and Devonshire cross, that are fully equal for quantity and quality of milk to my high bred Durhams, and for my soil, should desire no better cattle.

While they retain the rich red color of the Devon, they have the broad hip and loin of the Durham, which, to me, are desirable qualities. They do better on our light soil and short grass, and appear to thrive, where my Durhams decline. The Durhams, as far as my experience teaches me, and from what I can learn from others, require a full bite of rich grass in the summer, and a liberal allowance of substantial food, with careful attention and comfortable accommodations, in the winter. For those who have not the above conveniences at their command, the lesser and more hardy breed ought to be preferred.

I have seen some very superior milkers produced from a cross of the Devon bull and native cows; and for beauty of symmetry and richness of color, not easily surpassed if equalled. As to a cross of the Hereford with our natives, whether advantageous or not, remains to be proved; for, with the exception of those imported a few years since by Mr. Clay, until recently, I am not advised of any having been imported.

To sum up in a few words—any person who is about to adopt a new breed of cattle, must ponder well, and take into consideration the situation, climate, soil, and the purposes for which they may be wanted, whether for the butcher, dairy or yoke. The Durham, like the China hog, would not bear driving any great distance to a market. The Herefords may not endure a long drive when fat, but their appearance is certainly much in their favor.

I do not wish to be understood as saying any thing against the Durhams, Devons, or any other breed; each has its advocates and admirers, and each are entitled to favorable notice. The Durhams, in spite of the very high prices they have commanded, have worked themselves into favor, and have obtained such a strong and permanent foothold in several of the middle and southwestern states, that they cannot be easily displaced by any other breed. Great size, in all animals, whether cattle, sheep or swine, at the present day, appears to be the predominant and ruling object, and as long as that is the fashion, the Durham will, most assuredly, stand preëminent.

CALEB N. BEMENT.

Three-Hills Farm, July 1st, 1840.

CULTURE OF Madder.

Messrs. Editors—Will you give us from persons of observation, or on good authority, the process of growing madder; and of preparing it for the mill of the manufacturer?

What should be the quality of the ground—how prepared, planted, and crop managed?

The time required to mature; and the weight of dried product per acre, circumstances being favorable?

The usual market price per pound of the imported root, delivered fresh and in good order?

Possibly some experienced manufacturer, or late traveler in Europe, from the motive of encouraging a greater division of labor in agriculture, may be inclined to furnish through your valuable paper, some practical information on this important article of commerce.

Respectfully,
Blue Rock, Ohio, June 8th, 1840. ROBERT SILVEY

THEORY OF VEGETABLE NUTRITION.

GENTLEMEN—The subject of the following suggestions, is a part of "a Theory of Vegetable Nutrition," to which I have given some reflection, and upon which, through your columns, I would seek elucidation from abler hands, if I have misled myself.

The action of plaster, sulphur, lime, salt, nitre, soda, kelp, barilla, sea-water, potash, ashes, charcoal, magnesia, metallic oxides, &c., &c., upon the functions of vegetable life, I suppose to be essentially medicinal; each operating upon the juices and their elaboration, and upon the organization and structure of the plant, with distinctly similar medicinal influence and results to those which the same materials separately or combined would effect upon the blood or its circulation, or upon the alimentary principles of animal or human life or functions.

To arrive at a conclusion as to the truth or falsity of this suggestion, let us begin by an exposition of principles connected with it, as a branch of the theory, established by physiological writers, assented to by practical agriculturists, and which carry out and support analogies between animal and vegetable anatomy, nutriment, functions, and life.

The juices of the plant, and the blood of the animal, are alike the product of animal or vegetable organization and nutriment; and, other things similar, medicinal results upon such substances, as matter of vital circulation, should be equally so.

The health of the vegetable, its growth, and the quantity and quality of its seed, are as dependent on its juices, and the purity of them, as the human being or the animal, or their health, is, on the juices and blood, and their healthy condition.

The ruddy bloom of the human cheek is no better indication of wholesome food and healthy action in the system, than is, with the plant, the deep green which it exhibits to the experienced eye of the husbandman, who, while in that he predicts the promise of the coming harvest, as assuredly forecasts a failure when a yellow or sickly tinge is discovered in the hue of the plant. The aroma of the rose, and the velvet aspect of the dahlia in flower, are assured indications of the quantity and quality of the food with which its infancy and maturity have been supplied.

It is difficult to overcome in a plant, as in an animal, the diminutive influences of a want of proper aliment in its infancy; in short "a consideration of the life, growth and propagation of plants, as well as animals, necessarily involves similar topics, such as germination, nutriment, digestion, growth, and development of parts; sexualities, impregnation, and the changes consequent upon it; propagation, and dispersion of the species;" and as truly as man descended from his first parents and ultimately looks to his God for a solution of the mysteries of his formation and being—even so has every plant and its flower had its original seed, each requiring equally the intervention of a Creator to give it birth; both alike giving as incontrovertible evidence of a providential purpose in their vital formation, as does the watch or the steamboat, of the hand of man in its mere mechanical structure. Although human ingenuity may succeed in hybridizing a plant, in that, as in the mule, "nature abhors the production," and will assist no farther for its continuation.

Destruction of life gives aliment to vital succession; for as to plants, animals or human beings, as well as every living and creeping thing upon the earth, in the air, or in the sea, it is alike the doom of nature and its round of recreation, that they shall find aliment in nothing that has not, like themselves, had a previous vital existence.

But, in considering the plant in connection with the human being or animal, let us advert to another branch of the same theory, that is, to the prominent dissimilarities which exist between them as living structures. The animal is provided with a stomach and organs fitted for masticated and digestible food—animal, before decomposition has taken place, and vegetable, while its fiber is yet more or less adhesive. The plant is not similarly provided, and consequently can have no power over such substances. Its organization requires previous digestion or decomposition of both, to a point or degree which, assisted by atmospheric moisture, may render them capable of solution in water, and we are to conceive its nutriment as entering into the plant, where in the animal the labors of digestion have passed, and its food converted into chyle is about to enter into the blood of its system. The roots of the plant, in taking up its food, can only do so by absorption or intussusception, and it has no faculty of rejecting even noxious properties, if aqueous, and presented to its spongioles combined in a liquid state with its food. Evidence, however, is here found of instinctive influences, and consequently of sensations in the plant. If manure be placed on one side of it, roots from the plant will, underground and in the dark, seek and appropriate it as naturally as an animal would, in open day, go to luxuriant vegetation for its nutriment.

The plant has no aversion to excreted vegetable or animal substances;—on the contrary, decay above or underground, or a previous animal digestion, are indispensable to their preparation as its food. While some animals extract food from the excretion of others, it is principally from the undecomposed, or undigested portions of it, and none do so from that of their own species. Though plants too, are supposed to benefit by the excreted matter of other plants, they are evidently averse to that of their own species.

These suggestions should naturally lead to the impression, not only that the food—its nutritive juices

—their circulation through the system—and the operations of medicinal remedies, are in the plant similar to the operations of the same remedies in the animal system. But (unless the earth has a purifying influence on the tainted or putrefactive condition of animal or vegetable aliment,) the plant has more need of medicinal condiment than the animal, because all the impurities attendant upon previous animal digestion would otherwise be visited on the juices of the plant.

Hence I assert, and seek to prove, that while, without exception, all vegetable and animal substances, and every thing of vegetable or animal origin, or derivation, and their extracts in a soluble state, are, with more or less effect, according to fixed principles, (forming another branch of the theory) the proper and the only food of the plant,—lime, plaster, sulphur, salt, nitre, and soda, are neither its food nor manure, but that they come in aid of them by their medicinal action on its circulation, juices, and system, distinctly as the same materials affect the blood or its circulation in a human being or an animal. That some of them when taken into the juices contribute to the rigidity and fiber of the plant, and exhibit the product of it on analysis in increased quantity, I apprehend to be as true as that lime is necessary to the fowl, and contributes to the induration of the shell of its egg; and I would be understood as including in the nutritive action to the plant of manures, alike all those vegetables which have a poisonous or injuriously medicinal effect upon the human system, because I am not yet aware that this medicinal property of the plant in any degree influences its nutritive action on succeeding vegetable products of a different species when decayed and applied as a manure.

Silex and alumina (sand and clay) are incombustible, and therefore incapable of absorption, or the appropriation of extraneous substances; their fitness and adaptation to vegetable nutriment is only as a medium for holding, with more or less aptitude according to the various relative compositions or prevalences of sand or clay, manures and their condiments in solution, and as an element for the plant, as water is for the fish, or air for the animal or human being.

Nor is it necessary that mere earth should, as to the plant, perform any other office, unless it be as to moisture as hereafter stated.

Look with a magnifying glass at the sand of the sea shore—the interstices between its angular granulations, as visible as in a stone heap, show that liquid manure would drop through them as through a sieve. Look again at clay, through the same medium, and the strongest glass that can be found, will not enable the observer to separate visibly one particle from another: agitate a soil composed of both, actively in a tumbler of water, and the sand on cessation will be immediately precipitated by its comparative gravity, while the minute particles of clay will remain suspended for a long time in the liquid. Sand or clay, in the prevalence with either of 90 per cent, is sterile; because, with the sand, neither can the small roots of the plant hold in it, nor will it hold manure in solution long enough to enable the roots of the plant to imbibe or take it up; nor, in the same proportion with clay, can either the roots of the plant perforate between its compact and adhesive particles, or the liquid aliment with ease enter into it, or if in it, be easily extracted by the roots of the plant; yet in the relative proportions of 40 of sand to 60 of clay as a mixture, we find the best constituted soils. Because, while the sand prevents the adhesion of the particles of clay to its glassy granulations, and consequently makes it friable and loamy, the clay fills up the angular interstices of the sand, easing the perforation of the roots, and carefully holding as a cup-bearer or hand-maiden to the plant, manure in solution as its food, till its roots can absorb and take it up.

We see, therefore, that a stomach, or its digestive functions, are useless to the plant; and that the earth to it is but an element in which it may exist there, as we do in the air, till both of us get our aliment "altunde."

Still, as to moisture, sand and clay perform an indispensable office to the plant, independent of the fall of rains, and of their medium for the alternate influences of air, moisture and heat upon vegetable decomposition.

Wet either sand or clay, or both—weigh them—expose them to strong solar heat—weigh them again—it will be found that much of its moisture has been evaporated by the sun. Throw them into a crucible, over a strong fire, and when heated, weigh them again—the further reduction of weight will show that more moisture than solar heat could throw off has been evaporated. Take the heated earth from the crucible, and put it in the hottest sun, and it will be perceived on weighing it again, that it spontaneously regains from the atmosphere the moisture the crucible had driven from it. This would seem to show a positive attraction or affinity in earths for moisture.

The solid weight and measure of dry dust is necessarily less than the same material wet. The solar noonday's summer heat, and the midnight dew should, in so far as mere moisture is concerned, naturally produce that pressure of the particles of the earth by night, which would become relieved at noon by the evaporation of the midday's sun.

When we consider the minute and tender roots of the growing plant, and its meanderings through the earthy particles of sand and clay, seeking in the interstices, alike its alimentary nutriment, and its medicinal condi-

ments, may we not suppose the swelling roots to be aided by these alternate changes of night and day, and that this tendency is promoted more or less directly with reference to the diurnal production and dissipation of moisture, and to the friability of the soil and its texture, and thus account for the continuous aliment from manures to the plant, even in a time of severe drouth, and when rains have not fallen to assist the solution. But let us again consider the unctuous properties of manure, when moistened by the earth, and its comparative induration when out of the earth, and exposed to the sun. We here perceive the necessity and the office of that spontaneous affinity for moisture, which the earth exhibits under all conditions of solar heat—more especially underground, where the passage of the tender fibers and the roots of the plant are finding their aliment, and their way in quest of it. We see them flourish often in a drouth, and decline only in times of its utmost severity, and when the earthy affinities for moisture can no longer sufficiently protect them, even below the surface, from its effects.

But here again nature has, as I apprehend, enlisted nitre in aid of vegetation. That nitre and its tendency to moisture assist, we know—and "no phenomenon has excited the attention of chemical philosophers more than the continual spontaneous reproduction of nitre in certain places, after it has been extracted from them." In the proportion of 1 to 300 nitre is beneficial to vegetation, but in a greater degree it is unsafe and deleterious. "It is formed spontaneously in all situations where decaying vegetable or animal matters are decomposed, with access to air, and proper substances with which it may combine, such as soda, lime, alumina, magnesia and alkalis. Ground frequently trodden by cattle, and impregnated with their excrements, or the walls of inhabited places, or where putrid animal vapors abound, such as slaughter-houses, drains, or the like, afford nitre by exposure to the air." And I apprehend the formation of it in the earth, (the ordinary manuring substances contributing,) is promoted by merely stirring it with the plow, the harrow or the cultivator.

This or salt is as congenial and necessary to the vegetable as to the animal creation, and sustenance; and may it not be questionable, too, whether the saline exhalations of the mighty deep, abounding throughout the world, are not as equally indispensable to the general purposes of nature, and of nature's God, in that never-ceasing supply, and spontaneous formation of nitre in the earth, I have alluded to.

But we see, while a little salt is beneficial to vegetation, used in excess, it, as well as nitre, destroys living vegetables;—in other words, it affects deleteriously or medicinally, the juices of the plant precisely as it would the healthy state of the blood or juices of the animal, or the cutaneous functions of either plant or animal. That a certain excess may be excreted, see the white efflorescence on salt hay, or sedge, in places where marine moisture is in excess, often exhibited on the outer sides of the leaf.

The medical action of soda, kelp and the barilla of sea-weeds, in their tendency to correct acidity in soils and their vegetable products, I recently hinted at on a former occasion, in your paper.

So, also, as to the medicinal influence of lime upon sorrel. Lime destroys sorrel, because acid extract from the manure for its juice, is the essential need and quality of that plant; and lime in the vegetable as in the human system, corrects acidity, which comes into a soil as a sufficiency of healthy vegetable or animal nutriment and consequent fertility depart from it.

And is it not likewise true, that as the human system fails to correct acidity in the secretion of its food, imperfect digestion, unhealthy juices, sickly offspring, (if any,) disease and death, are the consequence? Acidity in the digestive process is necessarily a precursor; the danger is in the tendency to excess. Acids are chemical digestive assistants—alkaline earths and the salts operate as the correctors of those acids.

An animal is best fattened on acidulated slops, because the gastric juices, which a previous meal prepares for its successor, being met by food already acidulated, are the less requisite, from being thrown into the stomach of the animal in that state, and in so far fitted for digestion—and what otherwise would be required to promote digestion, goes to enrich the juices of the system. The danger only is in the excessive acid, and its tendency or progress to a putrid fermentation, in which state, as a food, it is poisonous.

The more caustic lime is, if applied to earth or soil in compost, or to the raw surface, the more effectual to correct or destroy the acid. But its action on the skin of a living plant, or the coats of the human stomach, would, unless diluted from that caustic state, be destructive.

Sulphur is beneficial to plants in due quantity, and forms, generally speaking, in plaster, about sixty per cent of its compound, as a sulphate of lime. The action of plaster is medicinal to the plant, as sulphur would be to the human being or animal.

Thus, a little sulphur given to a torpid animal, will, circulating through the blood, purify it, and secreted through the pores of the skin, will throw off enough to drive vermin from him. So, if a hole be bored in a tree, and filled with sulphur, it will, when dissolved or taken up by the moisture of the sap, be circulated through the tree, and while improving its health, and the hue of its

leaf, will excrete through the skin of the leaves, after purifying their juices, enough to drive insects from the surface—so, if it could be presented in a liquid state, with the manure in solution, to the roots of the tree, it would, I apprehend, at least in a limited degree, be taken up through that medium, and tend to the same result—the hole in the tree being only an artificial mode of administering with certainty the requisite supply.

So, sulphur, administered to a human being, will often excrete sufficient to give a sulphurous smell to the skin, and perspiration will often saturate in like manner, even the clothing which covers it. But if salt be put in the hole of the tree in excess, though in a small quantity, it will, as it dissolves from the moisture of the sap, be circulated through the tree, and effectually destroy, both above and under ground, every root and branch through which it is circulated.

It has often been considered astonishing that the small quantity of plaster, or of lime, ordinarily applied in agriculture, should produce the results which evidently flow from them. But if we assent to the position, that their action is medicinal upon the juices of the plant, we cease to wonder; because we find a spoonful of sulphur enough to affect medicinally all the juices, the blood, and the flesh in the system of an animal weighing several hundreds weight.

The relative quantities of lime, salt or plaster to manure, are as disproportioned to each other, as medicine is to aliment, in either plant or animal.

Plaster is said very generally to be, and I believe it is, inoperative within the saline humidity of the ocean. It is so, as I apprehend, for the same reason that lime is inoperative within a limestone region—because the former regions are atmospherically supplied with the sulphur, and the murate of soda (or sea salt,) or their equivalent in the requisite quantity for vegetable growth. Sir Humphrey Davy says, "In examining the ashes of sain-foin, clover and rye grass, I found that they afforded considerable quantities of gypsum; and the reason why it is not generally efficacious, is probably because that most cultivated soils contain it in sufficient quantity for the use of the grasses. In the common course of cultivation, gypsum is furnished in the manure, for it is contained in stable dung, and in the dung of cattle fed on grass, and it is not taken up in corn (grain) crops, or crops of peas, and beans, and in small quantities in turnep crops; but where lands are exclusively devoted to pasturage or hay, it will be continually consumed."

So where plaster is not used, manure is more extensively employed, and in that, some of the requisite sulphur is supplied.

Again, Sir Humphrey says, "seeds sown by way of experiment, in nothing but sulphur, have produced healthy plants, and many soils which nature has impregnated with sulphur, are highly fertile."

As an evidence of this, see the environs of Mount Vesuvius and its vineyards, with the delicious wines, particularly that irreverently called the "Lachrymæ Christi," so much esteemed and sought after by those who visit the mount.

Sulphur, therefore, would almost seem never to be in excess—(though this, for reasons I may give hereafter, I feel inclined to doubt.)

Deane says, (title *Plaster*), "It is possible, that the sulphuric acid contained in gypsum, may give that substance its principal value, and it would be well to experiment on the efficacy of sulphuric and other mineral acids, by applying them in a very diluted state, as a manure to plants, and likewise to mix them with composts in such proportions as may be most likely to ascertain their fertilizing properties, if any such exist."

Gypsum contains little else than sulphur and lime, and the small portion of plaster used, as compared with lime, shows, that the lime in that compound, relatively can have but a trifling action.

Deane, in continuation, says, "It has been affirmed that gypsum is not useful as a manure in the vicinity of the sea," and he there stops, without adverting to what he says in another part of his work, of the agricultural effects of sea water—"This fluid" he says, "contains, besides water, and particles of common salt, according to Dr. Russell's account, sulphur, nitre and oil."

Sea weeds, I apprehend, on analysis, would be found to have imbibed from sea water much of its sulphuric influence. But if we suppose sulphur at all to exist in sea water, and we advert to the very limited quantity which suffices for vegetable effects, may we not suppose lands within the reach of marine fogs, dews and vapors, in the lapse of ages, to be sufficiently supplied atmospherically, to make additional or artificial supplies unnecessary to vegetation; more especially if it be true that a plant inhales atmospherically much (some say even nine-tenths) of its nutriment.

Here too, it would be well to become assured that the mere saline humidity of the ocean does not offer in salt itself, a substitute for the effects of plaster. Any person, who for the first time visits the sea shore, will often be made sensibly aware of the atmospheric salt prevailing around him, by tasting it perceptibly upon his lips. Besides, too, is it not true, (and I am assured it is, by experienced medical men,) that cutaneous diseases, which find an antidote in sulphur, are not as prevalent in saline humidity, as in parts more retired from oceanic influences.

But for the present, to conclude, if we consider the effects of these aids to manure as medicinal merely, we have at once a conclusive reason why manures are not only requisite, but indispensable to the soil, in connection

with them, because the plant cannot support life on them alone, more than the animal or human being, neither being in itself, or by any compound of which they are capable, in any degree alimentary or nutritive.

I would here offer some further observations on the effects of sea water, soda, kelp, barilla, ashes, potash, charcoal, magnesia and metallic oxide, but I fear I have already trespassed on your columns.

These are, nevertheless, subjects on which my mind is in a train of reflection, and I offer them in the hope that wiser heads may do them better justice.

In your March number of the present volume, page 39, a Virginian correspondent desires you to remind me of the concluding paragraph to my communication of the 18th January, 1839. (Vol. 6, page 19.)

The heading of that article was editorial. Had I written it, I should have prefaced it "BARN-YARD MANAGEMENT." The promise was proposed by me, rather as to that, as the principal subject, than as to turf as a branch of it, or of the theory which forms the subject of this communication. I would cheerfully satisfy yourself, or your correspondent on any point of inquiry connected with the agricultural use of that material if so desired, by letter. Agricultural experience, observation or knowledge, in my view, is common property, and I would be, I hope, the last to withhold from my fellow laborers in the harvest, the mite which I may contribute to extend its usefulness.

Before writing the article in question, I exhibited my use of the turf to our lamented friend, Judge Buel, on one of his cherished visits to my residence. I showed him its influence on every product of my garden, which covers about two acres, and in my field crops. I yet continue its use, as there suggested, with the exception only, of burning it for ashes, which I do not do, only because it is, in my mind, a waste of a valuable material, which can be made more extensively useful where the supply is not absolutely unlimited. My field crops, of every description, and my garden yet as then, "tell the truth about it," and exhibit high luxuriance in every department.

I have freely given of it, a load at a time, to my neighbors for essay, and to induce them to practice the use of it, on the sole condition that they would put it by the side of their best manure, and tell me the comparative results. Their reports have, without exception, been to me, that it was fully equal, if not superior.

The most profitable use I make of it, is through the aid of fish; of which, in May or June, I bury one load to 12 or 15 of turf—remaining for decay, and to overcome in contact with the putrescence of the fish, the antiseptic properties of the turf, until the ensuing spring, when the thermometer is likely to range above the spontaneous decay of the fish and turf, and greater heat may aid or lead on its fermentation, say 65 or 70° of Fahrenheit, it is then broken finely over, carefully intermixed, and a stick put in it to give notice of the state of the internal fermentation of the heap. The whole then soon comes into a heat as active as the best of horse manure, and I find it quite as much in danger of "fire fangling," as that, if not properly watched and turned, to check its first heat when inclined to rise above 100°. The fish but slightly contributes in itself to this heat. It is mainly the vegetable matter, of which the turf is entirely composed; the antiseptic properties of which thus overcome, it becomes quite as well heated and prepared for decay and aqueous solution, as the vegetable fibre of hay, as partially digested by the stomach of the horse.

Fish as a manure, in the concentrated form in which it is generally used, in my view, is ultimately prejudicial to land, and its use should be otherwise understood. But, properly applied, it is the most powerful, ready, and appropriate, particularly for the wheat and grain crops, of any of the manures in common use.

Respectfully, gentlemen, your obedient servant,
W. A. SEELY.
Wheat Sheaf Farm, Staten Island, July 4, 1840.

Rittenhouse's Machine for Cleaning Clover Seed.

MESSRS. GAYLORD & TUCKER—In your November number, 1839, page 181, Francis H. Gordon wishes to know something about the clover machine that I use. I will now endeavor to answer his inquiries as far as my knowledge extends, in the use of Rittenhouse & Co.'s machine. I will take up Mr. Gordon's questions as he puts them.

1. What amount of seed the machine will clean per day?

The one that I have used for four winters, for cleaning clover seed, will clean from two to twelve bushels per day. I am now having it altered so that it will take more hands and more power, as it does not blow out the chaff at the time of cleaning, as it did before I increased the motion. So you will be obliged to clean the seed from the chaff after it is hulled with a fanning mill. There are some in this vicinity that have hulled thirty bushels in one day, although the fanning mill separated only twenty bushels the same day.

2. Is it worked by horse or human power?

It is worked with horse power, the same that is used to thrash grain, or it can be attached to water power, although I prefer the thrashing horse power, as they can be easily moved from one barn to another, and one machine will answer for a town, and it is easier moving a machine than clover chaff far.

3. How many hands are required to attend it?

It has only taken two hands to use the one I have worked—one to attend the machine, the other to drive the

team. As I have my machine altered, it will take two extra hands to clean the chaff through the fanning mill, at the same time you are cleaning the seed. It makes quick work.

4. Does it get out all the seed from the chaff?

It will get out all the seed that is fair and plump. There is a great deal of clover seed that is shrunk, occasioned by drouth, insects and frost, in this vicinity, that cannot be hulled by any machine with profit; as the fanning mill is in motion at the same time with the machine, all the chaff that falls near the fanning mill, is run through the machine again and again, until it is all out that will make merchantable seed. There is considerable seed, that is called with us tailings, that is almost always kept by the raiser for his own use. I had about ten bushels of these tailings in the spring of 1838, from fifty bushels of seed. It was owing to frost and the clover seed worm; the worms had eaten up one-third of my crop; some of the grains half, some more eaten up. So this and the shrunk seed made up so great a quantity of tailings. I sold some at half price to one of my neighbors, who told me that it produced as fine a piece of clover last summer as he ever raised. My opinion is, that there is no machine that will take all the seed from the chaff. You cannot have much tailings by thrashing or hulling it out with horses, as this kind of seed always gets blowed out with the fanning mill. I always sow my chaff after I get all the seed out that I can, as there will be considerable to come up. I have often cleaned seed where the employer has not thought it worth sowing, but I always sow my own chaff. These machines get it out cleaner than any other I ever saw.

5. What is its weight? How large, or what space does it occupy?

The machine is about the size of the common fanning mill. I have never weighed one of them. Two men can move them about the barn floor. I should think they would weigh between three and four hundred. They consist of a concave and cylinder, similar to that of a thrashing machine—cylinder thirty inches long, covered with hoop iron, with teeth stamped on, similar to a rasp—concave two-fifths around cylinder, covered with same materials; teeth set in opposite directions. It is the motion that hulls the chaff. The cylinder is eighteen to twenty-two inches diameter; motion about the same as a thrashing machine, and takes about as much horse power; can be used with strap or rod.

6. Can a common farmer keep it in order, or does it require a workman?

There is not much machinery about it. The only thing that requires much workmanship is the preparing the hoop iron, and the hardening the same. After the hoop is prepared and hardened, any person can make one that has ever made thrashing machines, or other machinery;—they require to be made very true in the cylinder and concave: there is a small fan under the fore part of the concave, like that of a fanning mill, that blows out the chaff from the machine; the wind is thrown up in the same manner as the fanning mill, by a small strap on the end of the cylinder, to the whirr on the fan or shaft.

7. Can one be had in Philadelphia, Baltimore, or New York city, and to whom should I apply?

The patentee lives at Albion, Orleans county, New York, who would prepare the hoop for any place. The machines are made by Halbur & Blaine, at Waterloo, Seneca county, N. Y., who have the right for that and some other counties. The machines are also made at Trumansburgh, Tompkins county, N. Y., by Grant & King. Persons wishing a machine, could be accommodated by addressing Izi V. Blackwell, Albion, Orleans county, N. Y.

I would here say a few words to Mr. Gordon and others, who are in the habit of getting out clover seed by trampling it with horses on the barn floor. It is a tedious job for man and beast, for I have tried it to my own satisfaction. It is like the plan recommended to increase our manure by hauling sods, washings of highways, and other matter into the yards for manure. It may do in Europe, or where land is very high, and labor cheap, but I think it is a slow way of manuring one's farm, where they can make clover grow; for I conceive that I can enrich my farm cheaper by clover than I can have my manure drawn from my yards eighty rods to the fields—so that hauling in and out would be like thrashing clover with horses, tedious work. Since I have had my clover machine in this vicinity, the crop of seed, as well as clover for hay or pasture, has increased beyond all expectations, as almost every farmer has more or less seed of his own raising to sow and to spare; and instead of sowing it as if it was gold dust, they sow it by the handful, as they think it does not cost much to raise it, and they can have it cleaned for 21 to 23 cents per bushel, at their barns.

Brother Farmers—Some one of you venture, as I did, to buy a machine, and see how soon your neighbors will have plenty of business for the machine in winter, while your wheat thrasher is lying idle. Then you will soon see your neighbors enriching their farms with that valuable manure, (clover,) and you will soon see their barns filled and new ones built to hold the hay and grain. You won't see but few of the barren, sunburnt fields that are intended for summer fallows, but you will see the clover fresh and green. So when you are plowing your fallows, you need not go half a mile to turn your teams out at noon or evening, but strip off the harness or yoke, and let your teams go in your summer fallow, in clover up to their eyes. Try it,

brother farmers, and see if you will be obliged to dig up highways to make your hogs earn their living in the summer, when they ought to be in your pasture of clover; and be sure and get that good breed, that will not only grow, but will fat on clover: that there is such a breed of hogs, I will vouch for, as I have tried it to my satisfaction. The value of clover to a dozen hogs, is worth more than the seed costs, to say nothing about the feed it makes for your other stock, and the food for a crop of wheat or corn, oats, barley, &c. Brother farmers—I do not wish to be understood that I am an opposer to animal manure, for I think as much of that as any of you, and I try and keep as much of it under cover as I can during winter, so that I can have all the benefit of it in the spring of the year, for my corn and potatoes, ruta bagas, &c. I scrape my yard every spring, and never move my barn, as has been done in western New-York, to get rid of the manure. Brother farmers, let me hear from some of you about the value of clover as a manure, that our editors may have some facts before them, from which they can judge of its virtue. Yours, &c.

HENRY BREMEN.

Enfield, Tompkins county, N. Y. 1840.

INQUIRIES.

Messrs. Editors—There is a farmer in this vicinity who desires an expression of your opinion on some points upon which he is not aware that he can obtain satisfactory information from the former volumes of the Cultivator. His land consists of two farms; one of 240, the other, 380 acres; 450 acres on both farms suitable for the plow, without any expense of draining; the soil generally a gravelly loam; some of it might be called by some farmers, a sandy loam; quality at least equal to mediocrity in this region; stands drouth very well, and does not retain the water so as to prevent plowing at any time. This land is now a large portion of it, to be broken up this season. There are about 90 acres now in wheat, and 56 in rye; 40 of which he intends to plow in for manure, about the first of June, and plant potatoes and ruta bagas; this rye is the second crop that has ever been on the land. The whole 450 acres appears to be well adapted to the cultivation of the ruta бага, potato, carrot and clover; and is a middling good wheat soil. This farmer does not expect to make himself rich by burning his straw, or moving his stables to get them away from the manure; and therefore requests a few such suggestions as your experience may dictate, for the management of his farms; and also answers to the following questions, so far as you are able to furnish them:

1. Can sheep husbandry be made profitable at the present prices of wool and tallow, in locations where mutton will bring but a low price?
2. How many sheep can be kept on the same quantity of food, or on the same quantity of land, that will keep one cow?
3. Can pumpkins be profitably cultivated by planting them with potatoes, in the manner they are usually planted with corn?
4. How many tons of pumpkins can be produced on an acre of good land, if there be nothing else on it?
5. Are pumpkins equal to ruta бага, for food for cattle, pound for pound?
6. Is rye meal worth more, or less, than barley meal, pound for pound, to mix with boiled or steamed potatoes, or ruta bagas, for making pork?
7. Are peas a good crop to plow in for manure?
8. If a crop of rye, oats or grass be turned into the soil, which, if cured for hay, would have produced a ton and a half of dry hay to the acre, how many loads of unfertilized barn yard manure is it equal to?
9. Are ground peas worth more than corn meal, for making pork, pound for pound?
10. Is one bushel of dry peas, after being ground, worth 2½ bushels of potatoes steamed, for making pork?
11. How many sheep can be pastured during the summer and fall, on one acre of good clover pasture?
12. How many pounds of ruta бага seed can be produced on an acre of good land?

A new Straw Cutter.

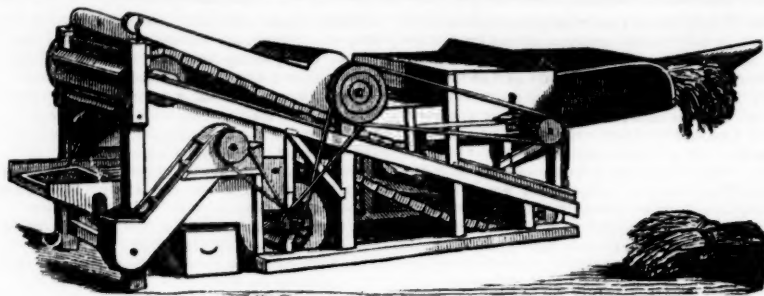
Mr. H. of Virginia, who is dissatisfied with Green's Straw Cutter, is informed that I have invented one that will suit him; have used it about three months and thus far, it answers the expectations of the inventor. This machine was constructed principally of wood, and performs the work well; but to make them preferable to any in use, for durability, I am now constructing one wholly of iron, except the frame. Measures will be immediately taken to obtain a patent, and the machines will be afforded at as low, if not lower price, than any other good machine. They will be so constructed, that in one minute they can be changed from hand to horse, or water power, by taking off a crank and buckling on a band. They perform the work very fast, and with the application of but little power, and cut the fodder of any length desirable. Yours, &c.

S. W. FOSTER.

P. S. Will Messrs. Brentnall inform the public with what kind of food they feed their hog, of which they gave an account in a late number of the Cultivator, and which obtained so great weight, in so short time?

Seib, Washtenaw Co. Mich.

S. W. F.



PITTS' MACHINE FOR THRASHING AND CLEANING GRAIN—[Fig. 76.]

Messrs. Editors—The above cut is a true representation of Pitts' Machine for thrashing and cleaning grain. Its weight is 700 pounds, occupying a space about eight feet by two feet four inches. The whole machinery is durable, and easily kept in repair. It thrashes and cleans all kinds of grain in the best manner, performing the work at the rate of from 25 to 50 bushels per hour. Four hands are required to tend the machine when in operation, viz.—one to forward the bundles, one to feed, one to measure and put the grain into bags, and one to pitch the straw away as it comes from the machine. It can be easily moved from place to place, and attached to any horse power, and can be used in the field as well as on the thrashing floor, there being no loss or scattering of grain after it is once fed into the machine.

It may not be improper to state, that I have located in the city of Albany, N. Y., where I am engaged in manufacturing the above machines, together with a superior four horse sweep power; price of the above machine, without the horse power, \$150—\$100 will be added for the horse power. Respectfully,

JOHN A. PITTS.

"POPULAR ERRORS" RECONSIDERED.

GENTLEMEN EDITORS—In the May number of the Cultivator, (page 81,) I noticed an article headed "Popular Errors;" in which the writer, among other things, asserts, and labors to prove, that wheat will not turn to chess. That it will, is certainly a very popular belief among the farmers in this wheat-growing community; but I very much doubt whether "M. S. D." will be able to convince them that their belief is founded in ignorance. His very logical arguments amount to this, that, "because an oak will not turn to a maple, a pine to a tamarack, or the progeny of a Durham bull to an alligator, why, forsooth, wheat will not turn to chess?" I do not intend at present, to enter into any lengthy arguments, to prove this "Error" to be correct; but shall merely introduce one fact, that I am an eye witness to, and can prove by others who have seen the same, which I think must settle the point at once, in the mind of every one, not even excepting that notorious unbeliever, "M. S. D." himself; which is, that wheat and chess will both grow on one stalk, the head being part wheat and part chess. Now I contend the wheat turns to chess, but if it can be accounted for on any other principle, I should like to be apprised of it through the columns of the Cultivator. It would annihilate the argument of "M. S. D." to say the chess turned to wheat—it is out of the question. The above fact may have been published and before the public; if so, I am ignorant of it. That a belief in the transmutation of wheat, has a pernicious tendency, by causing the believer to be negligent in tilling his land, or careless in procuring good seed, as asserted by "M. S. D." is another mistake: because tilling the land well, sowing good, sound, healthy seed, not already half degenerated, and but one remove from chess—ditching and furrowing after seeding to drain off all standing and surplus water, will obviate to a great degree, the natural causes that produce a degeneration and transmutation. Until the union of wheat and chess on one stalk is disproved, or otherwise accounted for, (and other good reasons,) I shall remain a firm and sincere believer in the transmutation of wheat. Yours, &c.

LOWELL HULETT.
Byron, Genesee Co. June, 1840.

NOTE BY THE EDITORS.

We cheerfully give a place to the communication of Mr. Hulett, on the question of the transmutation of wheat, and add a few remarks on what we consider its agricultural heterodoxy. "M. S. D." will answer for himself if he pleases.

In the first place, the theory of transmutation is in direct contradiction to the whole known order of nature. Not a single instance has been given in the long controversy to which the dream has led, or ever can be given, of the conversion of one species of plant to another, or one species of animal to another. Until this is done, we have a right to infer that it cannot be done. The true doctrine is, varieties change, species never. Now wheat is a well defined species of plant called *Triticum*, with many varieties; and chess is another distinct species called *Bromus*. The difference in root, leaf, stem, flower, head, and seed, is as well marked, invariable, and distinct throughout, as it is possible to be in any two plants; and there is as much reason to suppose that wheat changes to oats, broom corn or the sugar cane, as to chess. A few years since, Mr. Thompson announced that he could change wheat into chess at any time, by cutting off the tap root of the plant, below the upper or surface roots. His experiments were repeated by hundreds, and it is needless to say no chess was the result. The pear has a tap root in most cases, the apple rarely; will cutting off the tap root of the pear tree convert it into an apple tree? The mere statement of such an absurdity is a sufficient refutation, and yet it is precisely on the same level with the transmutation of wheat into chess, by mutilation or injury.

In the second place, we deny the "fact" upon which

Mr. Hulett rests his belief, most confidently and positively. We do not mean to assert that Mr. H. does not believe he saw what he states, most firmly, but we mean to assert that he was mistaken in the result of his observation. We have known so many instances where a similar demonstration has taken place, in which, under a more careful examination the "facts" vanished into thin air, that we are incredulous as to any such, where they contravene a known law of nature and nature's God. We will mention one or two of these cases that have fallen under our observation, and almost any one who has taken the pains to examine for himself, will recollect similar instances.

In October, 1832, Mr. Wadsworth brought from Michigan, a head of wheat, which he left at the office of the Genesee Farmer, as furnishing proof positive, and such as every man might see for himself, that wheat did turn to chess, and were here both growing on one ear. A single small branch of the chess sprang out among the kernels of wheat, apparently truly attached to the same stalk. The head had been kept some time, and all pronounced the "fact" decisive. To put the matter beyond a peradventure, a minute examination and dissection of the wheat ear, was made with the aid of a magnifying glass. The process of removing the glumes or chaff of the kernels was made with care, and it was discovered that the stem of the panicle of chess, which was not larger than a horse hair, had in the reaping, or some other way, been forced between the main stalk and the glume, thus retaining the chess in its place; while the slender stem of the chess was bent up in the direction of the beards of the wheat, and thus entirely escaped notice. Thus was dispelled fact No. 1, to the astonishment of a multitude of firm believers. Those who have the curiosity to look at this instance more fully, may find it detailed in the second volume of the Genesee Farmer, page 353.

Another "fact" of a similar kind was presented to our notice a short time before leaving Rochester. Mr. Andrews of Pittsford, a most respectable and intelligent farmer, a disbeliever in transmutation for forty or fifty years, liberally educated, and accustomed to think for himself, was converted to the theory of transmutation by a similar ear of wheat, and was kind enough to bring it to us for our inspection. The head had been shown to many, and was considered as affording an unanswerable argument in favor of the change of wheat into chess; and we doubt not the "fact" would have by some been cheerfully sworn to, on the evidence offered, had it been necessary. Yet this head of wheat when examined, and the glumes carefully removed, was found to be as far from affording any evidence in favor of transmutation, as others. The stem of the chess panicle was twined around and drawn close to the base of the glume and broken off, so as to leave no trace to its detection, so long as that remained unmolested. Mr. Andrews was astonished at the result, as also several others who witnessed the unravelling of the mystery. One such ear of wheat will confirm hundreds in this popular error, when if men would do in this as they do in other cases, use their fingers, as well as their eyes, such "facts" would soon be seen to be no facts.

The unanswerable arguments brought forward by DAVID THOMAS in the Genesee and American Farmers, against the theory of transmutation, should forever have settled that question; certainly until those arguments and facts had been disposed of. For ourselves, we have canvassed so many "facts" like the one stated by Mr. Hulett, and those noticed above, that independent of our belief in the impossibility of such a departure from the law of nature, we always look on such statements with suspicion, and however respectable and credible the individual, utterly unworthy of the least credence in themselves.

We must be permitted to believe that the position of our correspondent "M. S. D.," that a belief in the theory of transmutation, has a tendency to induce carelessness in cultivation, and thus perpetuate the evil, notwith-

standing Mr. Hulett demurs to the statement, is correct. Observation and experience, reason and fact, prove that men rarely take much precaution in guarding against ills over which they have no influence, and consequently, that he who believes in the transmutation of wheat into chess, will not be as anxious to free his seed from chess, as he who believes that the order of nature is followed in this, as in other matters.

We have extended our remarks to a greater length than we intended, as we consider this "popular error," a most injurious one, and one of those remains of ancient ignorance, which should long since have been dispelled by the increased lights which science, and a knowledge of the relation existing between cause and effect, have thrown over the operations of nature.

REARING CALVES.

EDITORS CULTIVATOR—In almost every number of your valuable paper, we find some new and economical manner to rear calves. The following is one recommended in one of your Cultivators of last year, and as I have tried it, I can cheerfully recommend it to any one wishing to rear calves. From the 1st of March to the 11th of April, I had five calves dropped. As soon as they were found, they were taken from the cow, and given a good handful of salt, and then fed flax-seed jelly and hay tea mixed, three times a day, until the 15th of May, when they were turned out in pasture to live on grass and water; and, sir, it is a fact that I have not seen a calf that has been raised in my neighborhood this spring, (and in every case they have been fed milk,) that is as likely as the five raised on the flax-seed and hay tea. I estimate the expense of rearing each calf at 18 cents up to the time they were turned into grass.

E. S. WILLETT.

Bethlehem, June 18, 1840.

REVOLVING HORSE RAKES.

EDS. CULTIVATOR—I notice in the last number of the Cultivator, an inquiry for the revolving horse rakes, and your descriptions of the kinds used. Will you please say in your next number, that these most useful labor-saving implements of agriculture, are manufactured at my establishment in this place, and may readily be shipped to any point on the canal. I have made them for five years past, but the demand in my vicinity has taken all I could produce. These are greatly improved from the kinds described in your drawings, and will perform much more labor, and with more facility, as there is no difficulty owing to winding of the hay around the head and journals, to which the kinds described in your paper are subject, and the command over them is so perfect, that they are used on rough grounds without much inconvenience. On our smooth grounds, the farmers do not carry a hand rake into the field, as these will perform the labor better, and one man, boy and horse, will rake ten acres of hay in half a day. I have made 400 this year, and intend to enlarge my operations next season. The price of them at the shop is \$7. I intend to forward a dozen or two to Mr. Thorburn, where you can inspect and try them. Yours truly,

AMASA MANN.

Frankfort, Herkimer co. June 19, 1840.

"SO MUCH FOR"—BERKSHIRES.

FRIEND TUCKER—You have probably judged from the tenor of some of my former communications, that we were cursed in this part of the country, with a species of wild animals, called hogs; and also of my intention to take some steps to convince my fellow-citizens, that they were entirely mistaken in the article. I am happy to state to you, that I have been eminently successful. The witnesses which I have introduced to prove my case, have, by a speaking, though dumb, eloquence, convinced the most sceptical.

In short, I received a few days since from A. B. ALLEN, Esq. of Buffalo, the first pair of Berkshire pigs ever seen in this country; and had I introduced an African lion, I verily believe it would not have excited more curiosity. They have been visited by hundreds, who had read the description and seen the picture of them, every one of whom believed it to be an overwrought description and picture; and every one of whom is now convinced, that "the half had not been told them." Were the pair that I have as prolific as a swarm of bees, I have already had more applications for pigs than I could supply.

This, sir, is the benefit of demonstrating to the eyes of the people the advantages of improvement in agriculture, in stocks and implements of husbandry. This is one of the fruits of agricultural journals. What a lesson may every day be learnt by examining these fruits. It is a lesson that should teach every philanthropic mind, how much good he may do his country by a little exertion to extend the reading of such journals, by the easy method which I have several times pointed out before.

And it is a positive duty that every friend to agricultural improvement, owes to himself and his country, to take immediate measures to introduce improved stock into his neighborhood.

Let those that are now able, set the example, and those that are less able will surely follow.

We are all creatures of example; influenced by the circumstances with which we are surrounded; and say what you will about "rich and poor," the poor look to the rich for example, and it is the positive duty of the rich to see that they have such examples as American

freesmen ought to follow. Reader! I speak now directly to you! Mark the fearful responsibility that I fix upon you! Let not another day pass over your head, till you inquire whether you are not able to extend the reading of an agricultural journal in your neighborhood? Is there not one poor laborer who would willingly work a day or two for you, if you would procure the paper for him? Are you not able to procure a pair of the improved breed of pigs, or some other stock, and introduce it into your neighborhood? You will soon see the heaven work; and it will do your heart good, to see the smiles and hear the congratulatory expressions that will welcome your efforts in a good cause.

Try it my friend; you never will curse the good advice of your old friend,

SOLON ROBINSON.

Lake C. H. Ia. July 6, 1840.

"SULPHUR SHOWERS."

MESSRS. EDITORS—Under this title, I observe some of your contemporaries are discussing the question of the origin of the substance that sometimes accompanies summer showers; and a correspondent of one of them says, that investigation has led him to the belief that it is nothing more than the blossom or farina, washed by the rain from the mosses growing on the roof of the house; a conclusion that subsequent observation has confirmed. "I have never," he says, "found this substance on water remote from buildings, or very early in the spring, or after the frosts of autumn, or on water caught from slate, tile, or tin roofs, or in any situation to negative the origin above assigned to it."

That the yellow substance supposed by many to be sulphur, is the pollen, or farina of flowers, is undoubtedly true; but that it could have the origin above assigned it, would never have entered the head of a man who had ventured beyond the sound of Bow-bells, or witnessed the operations of nature, where man rarely intrudes. I have hunted for days, in the woods, when my sleeves would be covered with this dust, brushed from the weeds or plants upon which it had fallen from the millions of flowers on the trees overhead; and from which, while blossoming most freely, after a day or two of warm still weather, a sudden gust, such as frequently precedes a thunder shower, would bring it down in such quantities, as to give the pollen color to all my clothes. I have seen too, this farina carried by a thunder gust nearly half a mile, in such quantities as to darken the air, and produce a greater deposition from a new shingled roof on which there was not a particle of moss, than I have ever noticed from any other building. The reason why this dust is not often found in water from slate, tile, or tin roofs, must be obvious to every one, who remembers that such roofs are not often found in or near those places where farina is produced most plentifully—I mean our native forests.

WOODSMAN.

AGRICULTURAL MORALITIES.

MESSRS. EDITORS—I am a plain man, not versed in metaphysical subtleties or legal abstractions, but I have my notions about right and wrong, old fashioned, perhaps, and I sometimes meet with things that rather run counter to my ideas of what is correct, and I wish to state some of my difficulties for you or some of your correspondents to remove, should you deem them worthy of notice.

There seems to be but one opinion respecting the men who wilfully injure the property of their neighbor. If I should poison the spring of my neighbor, mix arsenic with the oats fed to his horses, or feed him vomica to his sheep, I should probably be committing an offence against the laws that would subject me to a deserved punishment. If I should girdle or cut down his apple trees, set fire to his woodlands or fences, obstruct his water courses, turn animals into his wheat fields, or turn his stock into the highways, I should deserve, and should receive, the excommunications of every honest man, in addition to the exposing myself to retributive justice. All these are considered crimes, and their magnitude is estimated by the injury done or intended to be done to my neighbor.

Now I would ask where in reality is the difference between the above class of offences, and acts I shall now specify. I carry to market a load of clover seed, or a friend applies to me for a bushel for his own use. I know, but the buyers do not, that there is a plentiful sprinkling of Canada thistle seed in it, and that if sown on his farm, it will be the means of stocking his soil with that pest of the farmer. I have some wheat that is in great demand for seed, I am aware that it is full of stein kroust or charlock, but the purchaser does not notice their presence, and I make a good bargain in common parlance, by saying nothing about it. I have some corn, that resembles some valuable and celebrated variety, and I take advantage of the ignorance of my friends and others, to sell it to them for high prices, while I am aware that it has not a single feature of the corn they imagine it to be. I might enlarge this catalogue of similar acts, but enough has been given to illustrate my meaning.

I repeat the question, wherein does the guilt of the man who feeds his neighbor's horses with arsenic, differ from his who sells his neighbor the seed of the Canada thistle? For my part I am simple enough to consider the latter the greater offence. The crime is the destruction of property. In the one case it is the destruction of a few animals that can be replaced: in the latter the farm itself is comparatively ruined. Ask a Pennsylvania farmer which he would choose, to lose

his best span of horses by poisoning, or have his fifty or his hundred acres stocked with the thistle, stein kroust or charlock; and if he understands the nature of these plants, he would not hesitate an instant. The injury in one case would be but a trifle, compared with the other; why then should not a corresponding estimate be formed of the crime?

I make these remarks because I do not imagine the crime of injuring others in these ways, is sufficiently realized by farmers and others. The man who puts off spurious animals for good ones; who sells impure or bad seeds for clean or proper ones; who knowingly injures his neighbor or the public in these and other common methods of fraudulent imposition and puffing, is not to be held guiltless, because he does not put his hand in a pocket and extract its contents directly, or because he does not commit other overt acts against the majesty of the laws. He does not do as he would be done by; a plain unsophisticated test of conduct, to which all would do well to take heed; at least such is the opinion of an

OLD SCHOOL MAN.

RUST IN WHEAT.

Almost total failure of Crop in Northern Indiana and Illinois.

MESSRS. EDITORS—One month ago, could you have seen this fertile region of too rich land, you would have seen the greatest prospect of a great wheat crop that you ever saw. But that short month has been a succession of warm showers and hot sun, and the most universal blight has fallen upon us that I ever saw or heard of. It is not a piece here and there, but it is everywhere. Thousands of acres will never be cut, and such as will be, will barely pay the cost. Some fields are already rotten and stinking. It is only here and there a field can be found that will afford seed. There is yet much old wheat in the country, or the prospect would be still more gloomy than it is.

All other crops hereabouts look well. We must eat corn dodger and potatoes, and drink "hard cider," and have hard times one year more.

In haste, I am your friend,

SOLON ROBINSON.

Lake C. H. Ia. July 13, 1840.

A certain Cure for the Scours.

I had a mare that had the scours so bad, that it reduced her to such a state of debility, that she could not get up and down; and the final result was, that her hoofs came off, and new ones grew out. I tried every thing that I had seen prescribed in the Farmer and Cultivator, without success. The young men that worked my farm, then procured the leaves and roots of the red, not the black raspberry, and made a strong tea of it, and gave it to the beast three times a day. In a few days she got upon her feet without assistance, and the result was, a perfect cure.

A. H. N.

SALTING FLOWERS.

BY ALEXANDER WALSH.

It is asserted by a distinguished writer of great antiquity, that "he may conquer all things, who mingles the useful with the sweet." It may not be generally known, that common salt applied to flowers, will preserve them with nearly all their peculiar odor, undiminished for several years.

Roses, and other flowers, and aromatic plants, may be pickled and salted, and kept in that state, until a convenient time for distilling.

By this method, the season does not hurry the manufacture. Vegetables may be distilled in New-York, which were gathered in France or Italy, or even in Asia; and the perfumed water, or essential oil, will be in nearly as great perfection, both as to quantity and odor, as if the leaves or plants were fresh gathered.

The salting may be performed thus: Take one and a half pounds of rose leaves, or whatever other vegetable substance you choose, add a half a pound of salt, and rub them together about four minutes. The friction produced by the salt forcing out the juice of the flower, will reduce the whole to an aromatic paste, which must be carefully collected, and kept in a tight vessel, in a cool place, until wanted for distillation. When to be distilled, place the paste in the still or retort, with twice its weight in water.

I noticed in New-York, in March last, at a public sale, by Austin, Wilmerding & Co., of drugs and dye stuffs, a large quantity of articles connected with the line of perfumery, such as rose water, cassia buds, myrrh, frankincense, &c., imported from Europe and Asia; and among them, two large packages of dried rose leaves. Although every other article went readily, and at a fair price, yet the rose leaves could not obtain a bid, though some of the first perfumers in the United States, were present. Now had these been preserved in salt, and their value known, they would have commanded a ready sale than any other article offered.

To make Poperee, or a substitute for fresh flowers.

By collecting the leaves of roses, wall flowers, lavender, sweet brier, &c., and packing them with layers of salt, in a tight covered jar, or other suitable vessel, sprinkling with each layer a little powder of cloves and cinnamon, in equal parts, may acquire a delightful and refreshing perfume, which will last for years, with very little waste, which waste may be supplied, by adding fresh leaves, on the return of the following season.

Nothing on earth can more regale the senses, than a beautiful display of roses, and other ornamental flowers. But this has been hitherto considered as a luxury which could only be enjoyed by the rich, who wholly disregard profit. But if the most brilliant productions of Flora's kingdom can be rendered equally an object of profit and of pleasure, who would not have a flower garden? Every family, almost, can be furnished with a cheap apparatus for distilling, and may thus render pleasure and profit mutual auxiliaries to each other—[N. Y. Far. Vol. 7.]

HILLING POTATOES.

MESSRS. EDITORS—In one of your late numbers, (March, I think it was,) you were pleased to notice a remark that I had made in a former communication on the disputed question of hilling or not hilling potatoes, in which I said that both sides were right, and both wrong; the propriety of either practice depending upon the kind cultivated, and requested some farther explanation with reference to the different varieties. I am acquainted with but few of the numerous varieties now before the public as candidates for general preference, and therefore my observations must necessarily refer to such as I am acquainted with. In order to exemplify my position, I will take those two of them which I consider most dissimilar in their habits and manner of growth, the Kidney and the Black. It has been observed and truly, that potatoes do not grow from the roots proper, but from fibers or laterals shooting out from them; and the great difference consists in their tendency to form their tubers at longer or shorter distances from the parent stem. The Black potato seems possessed of the very spirit of emigration: it is a wide wanderer from home. The Pink Eye has the same character, but not to the same extent; and yet in them I have often observed in digging, the fiber from one hill run slightly under the surface and form its bulb in the next. (I make small hills, about 2½ feet apart.) But the Black is often found 2 feet or more from the stem, so that it has almost gone into disuse with us on account of the labor of digging. It must be obvious then, that with potatoes having such a tendency, drawing the soil away at about a foot or a foot and a half from the main stem, must be taking it away where it is most wanted. Very different is it with the Kidney: they are no wanderers; of short fiber, a sociable family potato, attached to their homestead, they are fond of clinging together in one dense mass in its center; nourish them there then; give them all the support your soil will afford; if you do not, they will not wander abroad for it, but will push each other till some are thrust out at the top, and with their green eyes stare you reproachfully in the face.

I remain yours,
Wellsboro, Pa. April 18, 1840.

WM. BACHE.

FOWLER, SPARE THAT BIRD!

MESSRS. GAYLORD & TUCKER—I know of few things more calculated to disturb the equanimity of mind, and ruffle the feelings of a humane man, one who lives among animals and birds, and feels as if they were all personal friends, than to see a shock-headed, straddling thing, calling itself a man, with rusty musket or rifle, creeping about our highways, woodlands, or orchards, and popping away at the harmless little creatures, that give to the landscape half its charms, and to the eye and the ear half their pleasures.

I know these men cannot look upon birds as I do, or they would not have to be guilty of homicide, to know what the sensations of a murderer are, when they wantonly destroy these creatures of the air. I plead not for the hawk or the crow; but for the beautiful songsters, that greet the morn with a hymn, flutter over and through our meadows and orchards, and exhibit an instinctive happiness that would reconcile the most morbid misanthrope to life and its cares. I never hear the song sparrow, that with us is usually the first harbinger of spring, without a feeling of gladness "that the winter is over and gone, and the time of the singing of birds is come;" and this feeling is increased, as day after day, the blue bird, robin, tree sparrow, yellow bird, bob-a-link, brown thrush, oriole, and swallow, successively arrive, and enliven the woods and fields with their presence, and fill the air with their music.

Tell me not that birds have not memories; that when the mysterious instinct compels their migration from us, they never return to their loved haunts, or again build in the same grove, but go whither accident or chance may direct. Only a few days since, I was standing in the field, and suddenly I heard the far off twitters of the barn swallow, of which not one had yet appeared. Away up in the blue sky, I at last descried him, as he slowly and on weary wing descended from his long flight, and with a song which could not be mistaken but for one of joy that his journey was over, he resumed his accustomed place on the ridge of the barn. In a few minutes he was joined by his mate, and during the hour in which they were resting from their weary way, many were the congratulations that passed between them. On the spot where for years they have built their nest, and reared their young, they are now building, and their absence is like the absence of friends.

And what is the crime charged upon these beautiful birds, that they are doomed to death by every boy or man, who is disposed to show his prowess in shedding their blood? Why they eat our cherries, or perhaps occasionally peck our trees or our sweet apples. This charge is true; but only a very small part are guilty, if guilt there is about it; and must all the acknowledged harmless species suffer for the act of one or two? Where is the man who can accuse the sparrow, yellow bird, blue bird, swallow, thrush, bob-a-link, lark, and a multitude of others, of preying on his crops or his fruits? Yet these are sought after and destroyed with as much avidity and hot haste, as the most predatory ones. The urchin or the ragamuffin raises his weapon, and the half-warble song, remains unfinished forever. I have admitted the charge, but if true in its fullest extent, would it justify extermination? Is there no good deed performed—no services rendered to the gardener

or the cultivator, which may be plead in extenuation or mitigation? I think there are many, and that the good they do over-balances many fold, as a strict matter of profit or loss, the trifling injuries they produce. The robin, the cedar bird, and the wood-pecker, are the three of the small birds most destructive to fruit, but these are far from being useless. I this morning saw in my garden, a robin hopping along on the ground; soon I saw it seize a black grub or cut worm, and in a few moments another. Those two worms among my melons or cucumbers, would have done me more injury than a dozen robins in my cherry trees, and yet these two formed but a small part of the worms of various kinds this single bird would devour in a day. Of all birds, the cedar bird is to me, perhaps, the only one positively disagreeable; yet I owe to a flock of these birds, that made my orchard their home last year, many a bushel of beautiful apples, as they fed continually on the cankerworm that at one time threatened the total destruction of some of my choicest fruit and trees. And the woodpecker, while you think he is only amusing himself, by hammering away on your trees, will, if you observe him closely, be seen ever and anon to thrust his long barbed tongue into a hole, and extract a grub that was performing and destroying inch by inch your tree. Depend upon it, the woodpecker will not hurt your trees, if there are about them no insects, or decayed wood, that requires excision.

Before you destroy a bird on your premises, or permit any one else to do it, be certain that you are not about to destroy one of your most faithful friends. Carefully weigh the good and evil they occasion against each other; think of the pleasure and instruction they afford; rise on one of our beautiful mornings before the sun, and hear from copse, and orchard, and grove, the thousand voices of joy and melody that are rising and mingling, and if you have a single feeling that belonged to man in Paradise, it will not be necessary to repeat to you—Fowler, spare that bird!

A FRIEND TO BIRDS.

WOOD LAND.

MESSRS. GAYLORD & TUCKER—We can grow wood much faster than is by many imagined; and the best method is to enclose the wood lands, that the young growth may not be plucked by cattle or sheep. It is the common practice with us, to select and cut only the decayed trees, which is not so fast nor so good a method as it would be to take by rotation on one entire portion where an attack is made. The new growth has an equal advantage of sun and air. If a man has 20 acres of wood land, let him cut clean one acre each year, and at the expiration of 20 years, the first cut will be covered with a heavy growth, again ready for the axe. But if this should be permitted to remain many years longer, the food to nourish each tree would not be increased, and of course, a struggle would be the result among the trees; the weaker would be compelled to give up to the stronger, and the whole growth would be retarded. I have observed that the second growth advanced faster in an old country, than in a new. The reason that I would assign, is, that the wood land, having a chance to rest in most soils, a different variety springs up from that which was previously taken off the same ground, and this new variety requires different properties, which are deposited in the earth to feed upon. If the wood recently cut was beech, the young growth may be chiefly maple, pine, &c. The different varieties extract different neutralizing qualities from the earth; one property being exhausted by clearing the land, it gives new vigor to another variety. They also receive more light and heat, and collect more dew; those vessels by which it absorbs the air and moisture on which it feeds, are better supplied. In an old country, timber is less abundant; that portion remaining also receives a better supply of the electric gases; electricity being one principal agent in fructifying and in the advancement of the vegetable as well as the animal kingdom.

In New-England, in those portions of the states which have been settled the longest, wood comes forward much faster and of a better quality, than in the new districts. It has been observed, that trees grow one third faster in the oldest portions of this state, now, than they did thirty or forty years ago. Nearly all of the pine timber has been destroyed in this state; and it is considered a fallacy by most people, to let young groves remain, with the expectation of being any benefit even to the second generation.

A Massachusetts farmer who settled in this town, has a quantity of thrifty young pines, which cover a poor piece of land; he has been advised time and again, to cut them down, but he has ever insisted that they were as profitable, or more so, than any other young growth that could occupy the ground. Twenty years ago, they were all small bushes; now, many trees stand in this grove, which are nearly or quite large enough to saw into fence boards.

I have a grove of about five acres; the common height is from twenty to forty feet, and as thick as they can conveniently stand. The same grounds were resorted to by myself and other children twenty years ago, as a berry lot, with now and then a pine bush.

Woods intended for timber, should be of the second, not of the primitive or forest growth; and those growing in thick shade and moist air, are not so hard and tough as those which receive the light of the sun and free air. The growth of trees should be encouraged upon all poor and stony lands, unprofitable for tillage. The best timber trees are from isolated clumps and

belts along permanent division fences; wood and timber trees, propagated by the road side and along side permanent enclosures, is an economical mode of obtaining timber and fuel; giving shelter to cattle and crops, and imparting beauty and health to the farm and landscape. The rock maple is the sweetest tree in the Green Mountain states; the second growth has a very handsome top, and is profitably cultivated for sugar.

Grass and grain crops are especially benefited adjoining the south side of wood lands, by the shelter they afford in cold winds; and cattle are benefited by their shade in the summer. As wood is advancing in value for timber, and the fire at home, and as an article of commerce, I hope the above hints will draw out from other correspondents corrections and valuable information.

Your friend,

SOLOMON W. JEWETT.

Weybridge, Vt. Feb. 23, 1840.

PREPARATION OF SEED WHEAT.

MESSRS. GAYLORD & TUCKER—Wishing to render some service to the cause of agriculture in this section of country, I will state my experiment with wheat. In the summer of 1837, having harvested a crop of very smutty wheat, and having been troubled in the same way for several previous years, I determined to try a recommendation I had noticed in the Cultivator. I accordingly used the same seed, which was very smutty, and, following the recommendation, I washed it in strong brine, made as strong as salt would make it, and then rolled it in lime, by laying it in a heap on the barn floor, and sifting the lime on it, and stirring it with a shovel till I could make no more stick to it. I sowed about nine acres in this way, and when I came to harvest it, very little smut could be found. I have continued the same process every year since, with the same wheat, and have now eradicated the smut from it. I have received more benefit from the experiment than the Cultivator cost me.

The ruta бага is beginning to be raised pretty extensively in this section of country, and is fed to all kinds of animals. Hogs eat it in preference to potatoes when boiled together.

SALMON MUNSON.

Exeter, Luzerne Co. Pa. April 20, 1840.

THE PEA BUG.

MESSRS. EDITORS—Having seen some description of the pea bug in the Cultivator, a more particular description of the manner in which they gain access to the pea, may not be uninteresting, as erroneous opinions have been formed respecting it. The pea bug, it is well known, comes out of the pea in the spring, before or after planting, and flies about like other winged insects, until the season for them to deposit the nits, that is, when the pea is formed in the pod. The bug then deposits the nits (which are small and yellow,) on the outside of the pea pod, which adhere to it by the adhesive moisture they contain. When the pea is about half or two-thirds grown, these nits hatch a small white worm with a black head; these make their way through the pea pod, and enter a pea if directly against one; if not, they crawl on the inside of the pod until they come to one. They may be easily discovered before the pea is hard, by the small speck on the pea where they have entered, where they remain until their transformation. The ensuing spring they emerge from the pea a perfect insect, to continue the general round of propagation. Very early, or very late peas, seldom have any bugs in them.

DAVID KIRBY

Rye, Westchester Co. N. Y. June 25, 1840.

CURING HAMS.

MESSRS. GAYLORD & TUCKER—From the commencement of the publication of the Cultivator, I have been a constant reader of that valuable paper, and have received both pleasure and profit therefrom.

An article in the January No. of the present volume, on page 19, from your correspondent "W. S. T." on "Preserving Hams," has attracted my notice.

Your correspondent (probably through inadvertence,) does not inform us how much meat his pickle was intended for, although he says "and so on in proportion for a less or greater quantity, as you may have to save."

As I have had some experience in curing hams, as well for my own table as for market, and my hams have always been sought for by those who have once purchased of me, I will inform you of my method of preparation, which is as follows:

For 100 pounds of ham, I take 6 pounds of Turke's Is. and salt, 4 ounces saltpetre, 1 quart molasses, or 2 pounds sugar—having added water enough to dissolve them, place them in a vessel over a slow fire and stir till dissolved and brought to the boiling point, carefully skimming off whatever impurities may arise; set it away until cold; the quantity to be increased or decreased, in proportion, for a greater or less quantity of meat.

As soon as the meat has become perfectly cold, (but not frozen,) I pack it as close as possible, in a sweet and clean barrel, and immediately pour the pickle to the meat; if the meat is closely packed, the pickle will cover it. Should the pickle not cover the meat, add pure water until it will. In four to six weeks, the hams will answer to put into the smoke-house, if wanted; if not wanted so soon, it may, without injury, lay in the pickle as many months.

When taken from the pickle to be placed in the smoke-house, I by no means allow a drop of water to touch it, but it may be wiped with a dry cloth. I have used corn cobs for smoking meat, and think them very good, but I

think *green chips* (or wood) of the *sugar maple*, quite as good, or rather preferable—perhaps a part of each would be better still.

I have usually smoked my hams from ten to fourteen days—have never tried an open smoke-house, but have one of brick, and perfectly tight, except the door and a small flue in one corner to let the smoke pass out. I am aware that in my smoke-house there is some danger of heating the meat, with too large a fire. To obviate that difficulty, I intend this year to make my smoke in a furnace out of the smoke-house, and to conduct the smoke in a small pipe from the covered furnace, through the sheet iron door of the smoke-house, which, I think, must entirely prevent any damage by heat.

Your correspondent's method of keeping hams, after taking them from the smoke-house, is one which I have tried, and much approve. One equally good, and attended with less trouble, is, where you have a tight smoke-house, in a cool situation, to let them hang in the smoke-house, and, perhaps once in two to four weeks, make a little smoke under them. Should hams be pickled with a view of keeping them through the summer, I should say seven, instead of six, pounds of salt, for 100 pounds of meat. Your friend, HARRY HALE.

Chelsea, Vermont, Feb. 19, 1840.

PRESERVING WINTER APPLES.

MESSRS. GAYLORD & TUCKER—Last April a year, I visited a friend, when he made me a present of a large dish of fine flavored apples, and it being out of season to have apples in such a good state of preservation, I inquired his mode of keeping them. He informed me that in the fall he made a box six feet long and two feet deep, which he sunk into the ground to a level with the surface, then he filled the box with sound apples, and covered it with boards in the form of a roof, but leaving an opening at both ends. The roof he also covers with straw and earth, to the usual thickness of an apple or potato hole. In this condition he leaves it till the apples are frozen, but as soon as a thaw comes, he makes it perfectly air tight, and in a few days the frost is altogether removed, and the apples are as fresh and perfect as when they were taken from the trees.

I am aware that this is an excellent plan, because I know that most of the apples and potatoes in holes rot and decay, in consequence of the warm and foul air accumulating having no opportunity to escape. I thought, however, to improve it. I consequently last fall buried my apples in the usual way; then I took four strips of one inch boards and nailed them together in the form of a chimney, leaving a vacancy in the middle, of one inch square; this I placed in the center of the apple hole, the end resting on the apples inside, and the other end projecting two feet above the ground. This succeeded far beyond my expectations. The vacancy in the chimney was barely sufficient to permit the warm and foul air to escape, and not so large as to let the frost in to affect the apples. My family, during the winter, whenever they wished to have apples for consumption, only removed the chimney and reached in with the hand to get a supply, and then replaced it again; and I can assure you that, of eight bushels which were thus buried, only three rotten and five or six slightly affected apples were discovered, whereas my neighbors, who buried their apples in the old fashioned way, lost a large quantity.

Can you inform me whether asparagus roots can be set out in the fall? (They may be transplanted in autumn as well as in the spring.—Eds.)

WILLIAM J. EYER.

Cattawissa, Pa. July 7th, 1840.

ROHANS, INQUIRIES, &c.

"I never nursed a dear gazelle.

To glad me with its soft dark eye,
But when it came to know me well,
And love me, it was sure to die."

MESSRS. EDITORS—In the spring of 1839, having formed a high opinion of the Rohan potato for a great yield, I procured a single tuber from New-York and planted with great care; but no sooner had the shoots appeared above the soil than they were attacked by the brown grub, whose habits threatened the little colony with annihilation, and spite of my efforts to protect them, they were so much injured that I did not realize half of a crop.

This season they are suffering from the same cause, while, as last year, the common potato, growing near by, is nearly exempt from the ravages of these depredators.—Is this species of the *Solanum tuberosum* generally more liable to injury from the grub than others? And is it (as I have often heard asserted,) "the identical Merino potato which was common among us fifteen or eighteen years ago?"

With vines, also, I have been unfortunate. Last season I procured seeds of some large and choice varieties of the pumpkin, but not a single one arrived at maturity; and the present season I devoted a considerable portion of my garden to the same purpose. I planted of four different kinds, and the few that came up have been completely destroyed by the striped bug. There is not one left among them—"no, not one." Cucumbers have also shared the same fate, and other tender plants been injured; and it was my sole object in taking my pen, to inquire for a remedy against the brown grub and the striped bug. By pointing out some remedy, you will oblige your friend, the writer, and perhaps confer a favor upon many others of your subscribers—too late, indeed, for this year, but in good time for the next. I have overhauled each volume

of the Cultivator (except one) for information on the subject, but have not obtained it.

I am no farmer, gentlemen, as most of your readers probably are, but notwithstanding, agricultural pursuits have a charm for me. The contemplation of this noble calling is one of the most pleasing subjects that can claim my attention. What pity that so many of our farmers even, do not look upon agriculture as of the first importance to a country—as the breast, the source from which society derives its sustenance. What pity, that prejudice, soul-numbing prejudice, should so blind them to their own best interests, as to keep them walking hoodwinked in the beaten track of their ancestors, rejecting without trial, or even the least consideration, as innovations, the improvements now making in the agriculture of many parts of our state, by which means crops are doubled, and the soil at the same time constantly improving. Prejudice, prejudice, that bar to human improvement, can do all this.—It can and does make farmers follow the "old system," until their farms are absolutely "worn out," and will no longer support their families, and they are compelled to "sell out" and go to "the west," there to follow the same round.

Did your journal find its way to the parlor of ever farmer, and meet with as welcome a reception as it does at my "cabin," a change would come over us, and the necessity of immigration would soon cease, as barren fields would give place to "nature's green and gold." But while we hear so much sneering at "paper farming," "book farming," &c. we can expect no such thing. A.

Ellenville, Ulster county, N. Y. June 10, 1840.

UNDERDRAINING.

MESSRS. GAYLORD & TUCKER—Having seen a communication on the subject of underdraining from your worthy correspondent, Mr. Jesse Langford, of Southampton, Va., and believing that my method of constructing underdrains is preferable to his, I have thought proper to make it known through the medium of your valuable and widely circulated periodical.

Cut the ditch sufficiently wide and deep to effect the object intended; make the upper half or part of the ditch from five to six inches wider than the lower or bottom part, thereby leaving a shoulder about midway the ditch, upon which place pieces of plank sufficiently thick to bear the weight of the dirt removed in cutting the ditch, either cross or lengthways, as may suit the convenience of the undertaker, then return the dirt, and the drain is completed.

This method of underdraining is attended with less labor, and of course less expense, than the one recommended by your correspondent aforesaid. It does appear to me that the water in some cases, owing to the quantity, cannot be let off by and through the aqueduct proposed by Mr. Langford. The old mode of cutting open ditches for the purpose of draining land, ought to be entirely superseded by every cultivator of the soil. I look upon it, as time, labor and money employed in vain. An open ditch requires annually at least half the amount originally expended in cutting it, to clear it out; but an underdrain, constructed after my plan, will last a man's life time.

I must avail myself of this opportunity of acknowledging my indebtedness to the columns of the Cultivator for much valuable and useful information. I am no enemy to book farming, and I do not know how a young man would undertake the improvement and proper cultivation of his soil, without the aid to be derived from some agricultural paper. I regret to say that we have no agricultural society in our county. The Cultivator and the Farmers' Register, however, have awakened a spirit of inquiry and enterprise among many of our best farmers, and I look forward with great anxiety and interest to the day when the occupation of a farmer shall be properly appreciated by all classes in society, ranked upon equality with the learned professions, and suitably aided and encouraged by the legislatures of every state in the Union. Then, and not till then, will agricultural societies spring up, premiums be awarded for prize crops of wheat, corn, &c.

Smithfield, Va. March 20, 1840. J****.

THE CHINCH BUG.

MESSRS. EDITORS—The chinch bug in this region is making great destruction of small grain, ruining whole fields—damage incalculable. Whole phalanxes of these pests are travelling, or rather flying and creeping over large sections of our state. For three or four years we have heard of their desolating progress coming toward us in these parts from the northwest and going southeast.—They were rife in mischief last year, in an adjoining county; but they are now in the full tide of operation in our midst. About 50 years ago, old people say here, they made their way before, ruining small grain, corn, &c. for about three years, in any particular section, and from thence passing on. They say also that ants seemed to be very destructive to them at that time. I have resorted to sowing ashes as a remedy, and have noticed that in some places of my wheat, where they were abundant, say 50 or 100 at the foot of a single stalk, now there are none; but in such places, I observe plenty of ants, so the remedy of ashes is rather equivocal.

The remedy of tomato plants, in and around fields of small grain and corn, I am trying in the manner stated in the Farmers' Register of last year. The result I will make known to you in due time.

You may have noticed in a late number of the American Farmer, that I have offered to contribute \$10 as my quota of premium for an efficient and feasible remedy for this scourge of farmers. The amount now, with the \$20

of the "Farmer," and others, is upwards of \$50 so far as I now know. SIDNEY WELLER.

Brinkleyville, Halifax county, N. C. May 22, 1840.

DEATH OF DALLIMORE.

MESSRS. EDITORS—Soon after I sent you the portrait of my Hereford bull DALLIMORE, I sent him, with the heifer, to my son, who resides in Northumberland, about forty miles north of Albany. The weather being at the time extremely hot, and the person who had him in charge not having been accustomed to driving cattle, and the bull not used to much exercise, having always been kept in the stable, was probably driven too far the first day, being twenty-five miles. He was started early the next morning, when it was first discovered that one of his hoofs had given way, which must have increased the fatigue, and about ten o'clock, when very hot, coming by the side of the canal, he plunged in, and before he could be induced to leave the water, it is supposed he became chilled or foundered, for it was with great difficulty he was driven the last three miles. He arrived at his destination about twelve o'clock, very much fatigued, and immediately laid down, and before night expired.

It is said, "bought wit is best—if not bought too dear." Had the person in whose care I had entrusted him followed my directions, or possessed either discretion or judgment, when he found the bull giving way, and the weather so excessive, he should have laid by in the heat of the day and only traveled in the morning and evening, which would, in all probability, carried him through safe, and he might still have been living and done the "country some service."

The loss is great, not only in a pecuniary point of view, but in the improvement of our stock—he being the first and only bull of that breed which has been introduced in this section, and more particularly now, since the introduction of those lately imported by Mr. Corning, which are attracting considerable notice in the country. Fortunately for me, I have a full bred Hereford bull calf, begotten in England and out of the heifer imported with the bull. CALEB N. BEMENT.

Three Hills Farm, July 20, 1840.

DESCRIPTION OF BERKSHIRES.

MESSRS. GAYLORD & TUCKER—I did not expect when I gave, in the May number of the Cultivator, a general description of the color of genuine Berkshire hogs, that gentlemen were going to half read the sentence, and then take a microscope in hand in search for "two white hairs" in the tail, or less or more, and then pronounce me in error. By referring to the article, it will be seen that I ended the sentence by saying, "there are, however, slight variations from the aforesaid color," &c. Now in addition to the correction that you have made for me in the July number, where the printer mistook the tail "invariably white," for "occasionally white," I wish further to add, that all four of the feet are generally white, and I do not recollect now, of ever seeing one when critically examined, clean, with less than two or three of the feet with white on them. I will farther say that pigs when young, sometimes show nearly, if not quite, one-third as much white on them as black, but as they grow up, the white gradually lessens, and when they have attained their full size, appear in general as I have described them. This was the case with my Newbury boar and Teal sow, that Mr. Hawes brought over for me in the autumn of 1838. The Reading boar was much darker, and scarcely changed in color as he grew up. The dark color on the Teal sow, may be said to be tawney rather than black.

I wish to add, also, that there are unprincipled persons, both in this town and elsewhere, that are greatly injuring the well bred Berkshires, by purchasing up at a low rate, pigs that have been bred in and in so long as to completely destroy their size and constitution, and also grade and spurious animals, and are palming them off upon the public as the get of my late imported boars or thorough-breds, and by issuing hand-bills, and extensively advertising, and selling below established prices, are gulling the public to a large extent; many of these animals, to my certain knowledge, did not cost the purchaser more than ten to twenty shillings per head, and yet they are offered as fully equal to mine, for which I charge \$20 per pair. Let the public be on its guard, and depend upon it, that no established breeder of reputation, will sell anything but *culls* and *runts* below the above price. With the pains that they take at all expense that they are at in breeding, they cannot afford it.

JOHN LOSSING, 253 Washington-street.

N. B. I have been called upon occasionally to give certificates of animals that were small and bred in and in, which I have reluctantly done, and wish it to be understood, that I meant them only as pure in blood, but by no means large well bred pigs, or such as could compare with those bred by myself. J. L.

Albany, July 20, 1840.

DISEASE IN SWINE.

MESSRS. EDITORS—There appears to be one thing among the diseases in swine, of which I have not seen any notice in the Cultivator. It is a complaint occasioned by the small issuing holes on the insides of the fore legs, opposite the knee, becoming stopped. A hog complaining in this way, has the appearance of being foundered, and may be cured by having his legs, or those small holes, rubbed in soapsuds or salt water with a corn cob. Yours, &c. SAMUEL B. SHANNON.

Shelbyville, Ky. May 26, 1840.

NOTES FOR THE MONTH.

THE TURF REGISTER for July, is embellished with a beautiful engraving on steel, representing a Hunting scene in Bogota, S. A.

THE SPIRIT OF THE TIMES, of the 4th, is accompanied with a superb steel plate engraving, 11 by 16 inches, of the celebrated race-horse **WAGNER**, owned by Mr. JOHN CAMPBELL, of Baltimore. Wagner has won 12 out of 14 races in three years past, winning the enormous sum of \$34,150. The **TIMES** of the 25th, has a portrait of **LITTLE WONDER**, the winner of the Derby, 1840.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—The society heretofore known as the English Agricultural Society, has received a charter from the Queen, under the above title. At the anniversary meeting in May, PHILIP PUSEY, Esq. M. P. was elected to the presidency of this institution. Their great show for this year, was to be held at Cambridge on the 16th of July. We hope to receive an account of it from a foreign correspondent in season for the next *Cultivator*.

A GOOD FARMER.—The *Farmer's Magazine* (London) for June, is embellished with a portrait of a Hereford ox, which took the prize of 15 sovereigns at the last Smithfield cattle show. He was bred by W. F. HOADS, Esq. of Marks Hall, Essex, who appears to be a very successful farmer, if we may judge from the number of prizes awarded to him in 1839, at the different agricultural shows, on bulls, oxen, cows, swine, sheep, wool, wheat, mangel wurtzel, ruta bage, turneps, &c. amounting in all to over \$500.

WHITE BERKSHIRES.—MR. SKINNER, editor of the *American Farmer*, says that he has recently sent to his friends, several pairs of Berkshires, that "for shape and good points cannot be excelled," and which were "all white with black spots on the skin." They were from the piggery of Mr. GEO. LAW of Baltimore, whose imported sow came from Mr. J. C. Etches, Barton Park, Derby, England—the pigs being by the boar sent to the Messrs. Shepherds, and mentioned at page 121 of this number.

HOGS FROM BRAZIL.—We learn from the same paper, that F. HARRISON, Esq. of Baltimore, has just received from Rio, a sow of the pure Chinese breed; a boar out of a pure Chinese sow, by a boar of the Parkinson breed of England, and a Brazil sow. The first is black and white, the second white, and the third, blue, black and white.

GENESEE COUNTY AGRICULTURAL SOCIETY.—We learn with pleasure that an Agricultural Society has been organized in the county of Genesee, one of the richest and most fertile of Western New-York. THEODORE C. PETERS of Darien, was chosen President; E. BISHOP of Attica, WM. E. HESTON, F. P. PENDELL and G. A. BRIGGS of Batavia, and L. C. DRAPER of Alexander, L. PECK of Bennington, L. CLARK of Darien, and C. BROWN of Pembroke, Vice Presidents; CHURMAN TURNER of Batavia, Corresponding and Recording Secretary; L. E. HESTON, Treasurer. They will hold an exhibition and fair on the 14th of October.

AGRICULTURAL STATISTICS.—The *Poughkeepsie Journal* furnishes us the result of the census in the town of Fishkill, Dutchess county, N. Y. from which it appears that the population is 10,513—No. of horses 1,776—neat cattle, 2,700—sheep, 14,000—hogs, 7,904—value of poultry, \$7,055—bushels of wheat raised, 54,035½—oats 240,347—rye, 10,674½—corn, 126,449—buckwheat, 11,165—potatoes, 71,648—pounds of wool grown, 26,000—tons of hay, 11,451—value of product of dairy, \$88,878—of orchards, \$4,902—of domestic goods, \$1,861—cords of wood sold in 1839, 2,326—pounds of wax, 55.

AN EDITOR CHEATED.—The editor of the *Rockbridge Farmer* is respectfully informed that instead of being "misled by the intelligent editor of the *Farmer's Register*," he has permitted himself to be *cheated* by his own eyes into as great an error as it would be to suppose that Jonah swallowed the whale, instead of vice versa. We hope he will read the remarks attached to the communication of Mr. HULETT in this paper, and then see if he can find one (not to say "thousands") of wheat stalks with cheat heads on them.

FAIR—SALE OF STOCK.—The *Maryland Agricultural Society* will hold a fair for the exhibition and sale of the various kinds and breeds of stock, implements of husbandry, &c. at Ellicott's Mills, on the 16th of September, 1840. Extensive preparations are making, and a large collection of animals of all kinds is expected.

GREAT CROP OF OATS.—A correspondent of the *Yankee Farmer* states that LATHAM HULL, Esq. of South Stonington, Conn. harvested 341 bushels of oats from 3½ acres of land in 1839, being nearly 81½ bushels to the acre. This is a good crop, but falls 40 bushels to the acre short of a crop raised by our correspondent, Mr. J. F. OSBORN, of Port-Byron, mentioned at page 50 of current vol.

MILK.—Adam Antony of North Providence, R. I. keeps 18 cows, which give an average of 593 gallons of milk per year.

POWERS OF THE ARAB HORSE.—FRASER, in his 'Tartar Journey,' relates as an undoubted fact, that an Arab horse traveled 520 miles in six days—rested three days, and then went over the same ground in five days.

GOOD MILKER.—MR. GOWEN, near Philadelphia, has a pure Short Horn cow, "Dairy Maid," which gave the first seven days of June, an average of more than 33½ quarts milk per day.

BOTTS' STRAW CUTTER.—JAMES M. GARNETT, Esq. in the *Southern Cultivator*, says he has compared

Green's straw cutter with one made at Richmond, Va. by Mr. C. BOTTS, and gives a decided preference to the latter in every particular. We should be pleased to receive from Mr. Botts, a drawing and description of his machine.

Great Sales of Cattle in Kentucky.

The *Fayette (Ky.) Importing Cattle Association* held a public sale of their imported thorough bred Improved Short Horns, near Lexington, on the 15th July, 1840. We learn from the *Franklin Farmer*, that the sale was numerously attended, and that the prices, for the times, were fair, excepting in two or three instances. The following is a list of the animals sold, with the names of the purchasers and the prices.

COWS.			
Names.	Age.	Price.	Purchaser.
Victoria,.....	5 y'rs.	\$1,750	R. Fisher, Mercer co.
Miss Hopper,....	6 y'rs.	270	Thomas Calmes.
Miss Luck,.....	6 y'rs.	800	H. Clay, Jr. Bourbon.
Elizabeth,.....	5 y'rs.	505	A. M'Clure, Jessamine
Fashion,.....	8 y'rs.	440	G. W. Williams.
Splendor,.....	6 y'rs.	650	B. Gratz.
Tulip,.....	4 y'rs.	700	A. M'Clure.
Brittania & calf,	2½ y'rs.	375	H. Duncan.
Isabella,.....	2 y'rs.	355	R. Fisher.
Lady Eliza,.....	2½ y'rs.	660	H. Clay, Jr.
Lilly,.....	6 y'rs.	390	T. Calmes.
Nancy,.....	3 y'rs.	730	C. J. Rogers.
Avarilla,.....	4 y'rs.	920	John Allen.
Beauty,.....	6 y'rs.	700	H. Clay.
Miss Maynard,...	3 y'rs.	1,005	A. M'Clure.
Jessie,.....	1½ y'rs.	530	Joel Higgins.
Rosabella,.....	1½ y'rs.	465	Wm. Warner.
BULLS.			
Carass,.....	3 y'rs.	\$725	B. Gratz.
Æolus,.....	4 y'rs.	610	R. Fisher.
Eclipse,.....	3 y'rs.	1,050	R. Fisher.
Crofton,.....	1½ y'rs.	155	J. Downing.
BULL CALVES.			
Prince Albert,...	2 mo's.	\$350	J. Flournoy.
Washington,....	5 mo's.	85	Dr. W. H. Richardson.
Nelson,.....	6 mo's.	610	P. Todhunter.
Orlando,.....	2 mo's.	305	H. Clay, Jr.
Trajan,.....	6 mo's.	150	Wheelan & Co.
Bruce,.....	2 mo's.	315	M. Williams.
Milton,.....	2 mo's.	285	James Gaines.
HEIFER CALVES.			
Maria,.....	5 mo's.	\$310	J. R. Ford.
Zela,.....	5 mo's.	445	G. W. Williams.
Flora,.....	6 mo's.	410	J. Thorn.

Seventeen cows brought \$11,045, or an average of \$650, (wanting a fraction) each. Four bulls, \$2,540, or an average of \$635 each. Ten calves, \$326.50 each.

There was a sale near Louisville on the 8th July. Two superb cows were sold at \$490—one brought \$210—another \$325. Two year old bulls were sold at from \$100 to \$230. The prices being so low, the greater part of the cattle intended for the sale were withdrawn.

IN ENGLAND.—The *London Farmer's Magazine* for July, received by the British Queen, furnishes us with the names and prices of a large lot of Short Horns, sold at public sale, by Mr. Wetherell, on the 29th May, 1840, at Mr. Parkinson's farm, Nottinghamshire. The list comprises 95 cows and heifers, and 27 bulls. The cows and heifers averaged about \$150 each, and the bulls about \$134 each.

NOTICES TO CORRESPONDENTS, &c.

☞ "R." will please accept our thanks for the portrait of his beautiful calf **ONEIDA**, which graces this number of the *Cultivator*, and we beg to assure him that he "rides" with too much taste and skill to permit the possibility of a desire for him to "dismount" on our part, or by his readers. We hope for a speedy fulfillment of the promised illustrations from his pencil.

☞ "J. E." of Lockport, is requested to furnish the specifications and estimate of the expense of the house for which he sent us so beautiful a plan.

MADDER.—MR. SILVEY will find the information he desires in the previous vols. of the *Cultivator*, to which we refer him. We, however, publish his inquiries, in the hope that Mr. Bronson, or some other person engaged in its culture, will furnish us with the result of their experience, and their views as to the expediency of a more general culture of this root.

TO PATENTEES.—Patentees or manufacturers of Agricultural Implements, would find it materially for their interest to furnish descriptions and drawings of their machines for publication in the *Cultivator*, as by so doing, they would make their implements extensively known in all parts of the country. Where the implement is patented, it is expected that the patentee or manufacturer will pay the cost of the engraving, but in other cases, the drawing would be engraved at the expense of the publishers.

☞ Subscribers to the *CULTIVATOR* in *Monroe county*, who have not paid, are requested to pay their subscriptions to Mr. S. HAMILTON, at the bookstore of Mr. Hoyt, in Rochester.

ADVERTISING SHEET.—We shall not issue another *Advertising Sheet* at present, if at all. Advertisements will, however, be inserted on the cover, which will be issued the last of November, on the completion of the volume.

THE MARKETS.

New-York, July 25th, 1840.

ASHES.—Pot Ashes continue in fair demand for export at \$4.75, at which about 300 bbls. have been disposed of. Pearls are very dull at \$5.25, without sales worthy of notice.

COTTON.—The Cotton market since our last report continued inactive until yesterday, when exporters and manufacturers came forward more freely, and sales to some extent were made, though without variation from previous rates. The transactions embrace 1,700 bales Upland and Florida at 7 a 9½ cents; 1,050 Mobile, 7½ a 10½; 150 New-Orleans, 9 a 10½; and 150 Texas, 8½; short price—making a total for the week of 4,700 bales.

FLOUR AND MEAL.—The inquiry for western flour for export to England noticed in our last, almost entirely ceased with the transactions then reported, and on the date of our last publication there was but little done; on Thursday, however, there was some revival of demand for the same destination, and about 4,000 barrels Genesee and Ohio changed hands, at \$5 for common brands of the former, and flat hoops of the latter. The market yesterday was inactive, and we heard of no sales worthy of notice, though holders, in the absence of other than moderate receipts, are firm at our quotations, which are slightly varied. Southern Rye Flour is in better request, and an advance of 12½ cents per barrel has been obtained. About 150 hogsheds Brandywine Corn Meal sold for export, at some improvement on former rates, though it is understood at something less than \$15. 12,713 barrels of Wheat Flour were exported from the 1st to the 22d July.

GRAIN.—The last cargo of new southern wheat sold at \$1.10, cash, since which there have been no further receipts. Nothing done in old. The demand, as well as the supplies of northern rye, is moderate; 1,500 bushels were taken for distilling at 57 cents, delivered, and this may now be considered the market price.

HEMP.—Clean Russia is in moderate request at \$215, 6 mos. at which 15 a 20 tons have been disposed of, in lots from store; 100 bales Manila sold, supposed, \$133; and 6 tons Kentucky at \$130, both 6 mos.

PROVISIONS.—We have no variation to notice in Beef or Pork; there is a fair demand, principally for the small parcels usually required for ship stores and city use. Lard is rather scarce, particularly in barrels, for which there is considerable inquiry for city consumption. Hams, smoked beef, &c. are without change.

WOOL.—We have no improvement to notice in this article, there is rather less inquiry for coarse, and we have only to notice a sale of 2,000 lbs. Smyrna, at 12 a 14 cents.

American Saxony, Fleece, lb.....	32 a 35
American full blood Merino,.....	30 a 33
American ½ and ¾ Merino,.....	25 a 30
American Native and ¼ do.....	20 a 23

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